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EXTENSION POSTGRADUATE MEDICAL INSTRUCTION IN THE UNITED STATES AND CANADA

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The amount of useful information of the medical profession has increased from generation to generation, especially in the last fifty years. The members of the medical profession are guardians of this great fund of knowledge, which should be used to its fullest extent for the good of mankind. The dissemination of this knowledge and its actual application to the relief and prevention of suffering constitute a continuous problem. Improvements in treatment and new discoveries are constantly being made, so that it is necessary for all physicians to continue to study if they hope to fulfil their trust and give the best possible medical service.

The store of professional knowledge is in the medical schools, the health departments, the medical libraries and hospitals, and the minds of highly educated physicians. The agents for disseminating this information so that it may become an actual force in improving the community health are the organized medical schools, undergraduate and graduate; organized medical societies of all types; postgraduate extension schools run by universities, medical societies or departments of public health; medical books, and professional journals. If all these methods of providing instruction were at the highest point of efficiency and interest in them were 100 per cent, the practice of medicine would be materially improved.

The quality of these various agents has improved especially since the beginning of this century. From 1899 to 1905 THE JOURNAL [1] pioneered in classifying medical schools on the basis of each school's own statement of its ability to teach medicine; this lenient method soon gave way to inspection and classification of schools on the basis of their actual assets, which were often not what they were advertised to be in their well printed catalogues. Also, it was in 1910 that the Carnegie Foundation published its independent survey of medical schools with its candid and sometimes scathing criticism of poor teaching facilities. The combined result of this has been especially to improve teaching in the undergraduate field. The Council on Medical Education of the American Medical Association has annually issued a register of medical schools and classifies them according to definite standards of equipment, clinical facilities and faculties. The work of this body has been a continuous influence for good in advancing the standards of medical practice.

Postgraduate teaching facilities have not improved as rapidly as in the undergraduate realm. In fact, at the present time postgraduate medicine is essentially a proprietary field, as only one school has any appreciable endowment (Albany Medical College has $250,000 endowment) for strictly postgraduate teaching. This may be due to two reasons: First, no great effort has been made to improve this situation comparable to that made for undergraduate medicine. Second, the profession itself has not demanded very much teaching—not enough to justify expansion of faculty or facilities. The Final Report of the Commission on Medical Education in the United States (1932, p. 128) states that each year approximately 3,500 doctors take resident postgraduate courses in this country and about 1,000 go abroad for similar work; besides this there are 2,144 doctors in residence in 372 hospitals. This makes a grand total of 6,644, or 4.2 per cent, out of the 156,440 M.D.'s in the United States who consider it desirable and feasible to continue their studies in a systematic manner away from their practice.

There is no doubt that some physicians keep abreast of advances in medicine by observation and home study, but for the majority some outside stimulus is useful and often necessary. The bookmaking art has reached a high plane and medical journals are legion; however, the interested and interesting teacher is still the mainstay of the educational system. In all ages teachers have exercised a leavening influence in their communities, and often a very large portion of the world might be called their field. Information and inspiration have greater effect when given by personal contact; the convincing voice of an experienced clinician carries more conviction and conditions medical reflexes for good more effectively than any printed page.

The outstanding phenomenon in the graduate field of medical education is the rapid growth of extension teaching in both the United States and Canada since 1916, at which time it was first initiated by the state of North Carolina at the suggestion of Dr. W. S. Rankin, public health officer of that state.[2] The idea of bringing medical knowledge to the community so that every doctor can know the latest and best in his profession by contact with teachers has been put into effect in twenty-two states and all of the provinces of Canada. This is a partial answer to the question of why more doctors do not go away to postgraduate schools. In this area there are approximately 120,332 [3] M.D.'s who, one might say, have been exposed to organized postgraduate study opportunities. Often, and particu-

1. Simmons, G. H.: Some Fragments of History of the American Medical Association: III. Medical Education-Pioneer Work of The Journal, American Medical Association Bulletin **28**: 138-148 (Dec.) 1933.

2. Adams, F. D.: The North Carolina Extension Plan, J. A. M. A. **80**: 1714-1717 (June 9) 1923.

3. American Medical Directory, ed. 12, Chicago, American Medical Association, 1931.

larly in these times, a doctor cannot afford to leave his practice to go to postgraduate teaching centers. In some smaller villages there is only one physician, and he may hesitate to leave the community without medical care in time of unexpected emergency. The important fact is that the profession as a whole has expressed interest in and a desire for continued organized study. This great need presents an opportunity to medical school faculties and all leaders of the profession. Teachers are needed to "carry the message to Garcia."

In all these fields of medical education there is no competition and there are no cross purposes. The undergraduate days are a period of probation. Following this the doctor enters the postgraduate era of his career—a lifelong session, if he is to achieve his best and have the highest satisfaction in his work. Society has become interested in postgraduate careers and has made laws that require a year of internship service before granting a license to practice in the following states and territory: Delaware, District of Columbia, Illinois, Iowa, Michigan, New Jersey, North Dakota, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Utah, Washington, West Virginia, Wisconsin, Wyoming and Alaska. This is essentially continued study while applying one's knowledge. The American Medical Association and the American College of Surgeons grade the hospitals; thus the hospital staff members are approved teachers. The Massachusetts General Hospital calls its interns "house pupils," which is an old term but it reflects the true situation of the young doctor. It is the duty of the profession to observe and study unceasingly by means of books, medical journals and active participation in organized study or teaching. Education in a democracy means a sharing of knowledge as well as a sharing of the benefits of material civilization.

All these modes of continued medical education mean an enlightened profession and consequently better medical service. This has great significance in private practice as well as in the field of public health, where success depends to a great extent on the intelligent cooperation of the practicing physician. Increasing the fund of useful knowledge and applying it should improve the economic status of the profession, and, what is more important, it should enable physicians more nearly to fill their proper place as leaders in the art of healing. No longer should any remote geographic region suffer from neglect, the fruit of ignorance. Transportation has transformed distance, and study will banish the frontiers of ignorance.

The ability of doctors varies in different communities. As physicians we know this, and that laymen recognize it too is shown when they travel across a state or beyond its borders to seek relief by some physician in a well known clinic. It is interesting to speculate what is the essential difference between the doctors in a community and those in a well recognized clinic. Is it not largely in their attitude toward study and the actual use of new knowledge in giving intelligent service to patients? The personal equation of 1,000 doctors anywhere in the land will compare favorably with a like number of professional brothers elsewhere. Material things, such as laboratories, x-ray machines and instruments of precision, are of secondary importance; they are mobile paraphernalia which can be moved anywhere and are only adjuncts to the use of knowledge. The well educated physician makes proper use of all knowledge related to the welfare of the patient and his community.

While assisting the Massachusetts Medical Society to organize a system of extension teaching during the past year, I have had occasion to investigate similar work elsewhere. A summary of this study is presented as evidence of the widespread interest in postgraduate education among the profession. No body of professional workers will devote more thought and energy to accomplishing ends when a worthy goal is set. It is reasonable to believe that this growth of extension teaching marks the dawn of a new era in postgraduate medical education. This interest is reflected in changes and new ideas in intramural teaching as well. This expansion of interest in acquiring new knowledge is part of a world-wide renaissance in adult education which is permeating all phases of life.

MEDICAL EXTENSION TEACHING

The following summary of medical extension teaching in the United States and Canada gives data that may be of interest to states in which such work is not done; also, it provides a means of comparing the costs of such work. The best method of organization has not been worked out as yet, but in these states there is an active interest which augurs well for the future training of the profession.

Canada.—Extramural postgraduate medical education in Canada has been in progress since 1926. The lectures are open to every doctor whether or not he is a member of the Canadian Medical Association. It is estimated that a majority of the 10,000 doctors in Canada have at some time enjoyed these meetings. There is no charge for lectures. The instructors for the most part have been university teachers; expenses have been paid as well as an honorarium of $10 a day for the time the instructor is away from home. This work was made possible during the years 1926 to 1932, inclusive, by an annual grant of $30,000 from the Sun Life Assurance Company of Canada. All details of organization have been handled by the central office of the Canadian Medical Association. Speakers are sent to meetings of organized medical societies, which are responsible for local arrangements; the instructors go out in teams of two; if sent to distant provinces, a series of meetings is arranged en route in order to save expenses. Figures for 1926-1932: number of speakers, 2,156; number of addresses, 4,889; average attendance, 32.9; total attendance, 161,210; total cost, $212,847.52; cost per lecture, $1.32 per doctor. Members have been enthusiastic about the lectures and have traveled from 50 to 150 miles to attend. Canada is the only country in which postgraduate medical education has been handled on a national scale. The grant from the Sun Life Assurance Company has been temporarily withdrawn, owing to the business depression.[4]

Colorado.—During 1924, clinics were given by ten teams of four doctors each, who visited a locality once each month for six months. No team visited the same locality a second time and all teams represented, as far as possible, the same four specialties. The faculty paid their own expenses.

For several years previous to 1927, Colorado held an annual state clinic. This was given at the University of Colorado Medical School and consisted of four days of intensive work covering all phases of medical study. The average attendance was about 300. A traveling clinic of four days' duration was held at irregular intervals, in which the extension division of the University of Colorado, the medical school, the Colorado Agricultural College, the state tuberculosis association and the child welfare bureau participated. For these traveling clinics the teams were made up of a pediatrician, a psychiatrist and an obstetrician, chosen either from the faculty of the medical school or from among the leading practitioners of the state. Expenses were met by the participating organizations.[5]

In January 1933 the state medical society sponsored for the first time a three-day postgraduate clinic series (diagnostic and

4. Dr. T. C. Routley, general secretary, Canadian Medical Association, personal communication to the author, March 3, 1933.
5. American Medical Association Bulletin 23, June 1927.

therapeutic only), which was given independently but with the cooperation of the medical school. No salaries were paid instructors. More than 200 physicians registered out of a state society membership of 1,114.[6]

Connecticut.—The state medical society, with the cooperation of the Yale University School of Medicine, initiated a clinical congress of three days' duration in 1924. Until 1929 the registration fee was $10, at which time there was a surplus of approximately $3,000, the average attendance having numbered 325 doctors out of a state society membership of 1,396.[7] In 1929 the fee was reduced to $5, a charge sufficient to cover all expenses provided the enrolment totaled 275 doctors. This three-day congress includes morning sessions devoted to the didactic presentation of subjects, afternoon sessions devoted to round table discussions, and two evening meetings devoted to the social and economic problems of medicine. The fee for the congress includes the cost of circularizing with preliminary programs, luncheons and the expenses of visiting speakers (which are defrayed). This is considered a successful venture.[7] This is not the extension method of instruction but represents the organized effort of this medical society to provide postgraduate instruction for its membership.

Florida.—Postgraduate courses were inaugurated, June 19, 1933, by the Florida Medical Association in connection with the Extension Department of the University of Florida. Instructors receive traveling expenses and maintenance while in Gainesville.[8]

Georgia.—Extension courses were first started in 1918; special emphasis was centered on the diagnosis and treatment of syphilis in seventy-two health unit clinics of rural counties; also a clinic week was held in Atlanta which was attended by 142 physicians from eighty-four counties. In 1931 the total registration for the clinic week was 3,062 and attendance was counted as postgraduate work. As a direct result, a reduction of 40 per cent of brain syphilis in the state hospitals has been noted since 1919. The University of Georgia Medical Department organized an extension course, through the county medical societies, holding one-day sessions. Later, five-day courses were established.[9]

Extension courses are now given with the cooperation of the state medical association, the medical society of the county in which the course is held, the state department of public health, the University of Georgia Medical Department and Emory University School of Medicine. The faculty is drawn half and half from the two medical schools and the professors are paid only expenses. No charge is made to the doctors attending the course; local expenses are borne by the county medical society; correspondence and other expenses are borne by the state department of public health.[10]

Illinois.—A scientific service committee was established by the state medical society in 1923 to carry postgraduate extension teaching service to the county medical societies. One of its most popular methods of doing this has been by means of teams of from four to six members of the faculty of one of the medical schools. The society frequently sponsors a clinicopathologic conference (internist, surgeon, pathologist). In September 1933 a series of pediatric meetings was held throughout the state by teams of six, one member of each team being outstanding in this specialty. County societies are privileged to select a subject and request an all-day meeting; to meet these requests, nearly 400 physicians are listed in the state medical society's speakers bureau with the subjects they prefer to present to any county medical society. In 1932, speakers were sent to more than 150 medical society meetings in Illinois.[11]

Indiana.—Indiana University School of Medicine has given, for a number of years, occasional postgraduate work for the various county medical societies. Feeling that this did not fill the need, the state medical association held a successful two-day meeting in Indianapolis in the summer of 1932. The registration fee was $2.50; speakers from within the state received no remuneration; speakers from without received their traveling expenses. The association held a one-day program at Richmond in the summer of 1933. The Indiana University School of Medicine gave a two weeks postgraduate course in Indianapolis in 1933.[12]

Iowa.—The speaker's bureau committee of the state medical society inaugurated postgraduate work in 1929. The State University of Iowa College of Medicine outlines the courses and furnishes the lecturers; the bureau manages them. In 1929 two courses, obstetrics and pediatrics, were given at Waterloo (forty-three registered) and Mason City (forty registered). Meetings were held from 5 to 10 p. m., one day a week, for a period of ten weeks; the fee was $10. Only the expenses of the lecturers were paid. In 1930, courses were given in five centers; a course in cardiovascular diseases was added and the fee was increased to $20. In 1931, courses were given in five more centers; a course in surgery was added and the fee remained unchanged. The demand for these extension courses was too great for the college of medicine to handle, so the state medical society began to run them independently. In 1933 the association conducted three such courses; the fee was $10. Instructors were drawn from the State University of Iowa College of Medicine and from other prominent doctors in the state as well as doctors from outside the state.[13]

Kentucky.—For several years a two weeks course of graduate instruction has been given at the University of Louisville School of Medicine, for which there is a registration fee of $2. Weekly postgraduate extension courses in obstetrics, in cooperation with the state board of health, have been given since 1931. No registration fee is charged, and the expenses of instructors are paid by the state board of health. Dr. P. F. Barbour, president of the state medical association, arranged for a series of courses for county medical societies in 1933. Societies were to be supplied with two men each day for one week, the entire day to be spent in demonstrations and dry clinics; the association was paying the expenses of the teams so that there would be no local charge.[14]

Massachusetts.—Postgraduate instruction was begun by the Massachusetts Medical Society in September 1933. There are eighteen district societies that are 100 per cent organized, and instruction is now given in twenty-four centers. The program is supervised by a committee of eighteen representative doctors chosen to correlate all the medical teaching interests of the state; this committee appoints an executive committee of three and a secretary to handle the details of organization. A registration fee of $5, plus an appropriation of $1,000 by the society, will meet the expenses of this first year. A faculty of 174 doctors will give 240 sessions of two hours each this year; instructors go to the districts in teams of two or three members. The course is now (February 1934) in progress; 1,002 doctors are enrolled out of the society membership of 4,797. A more detailed report of methods and results will be published later.

Michigan.—For about ten years (1927 statement) organized teams have gone to the county societies for an afternoon and evening program. Also, they have held district conferences similar to the Ohio plan (thirty in fourteen districts during 1926), and postgraduate clinics at the leading hospitals of the state. November 1926, 300 attended the University of Michigan Hospital.[5]

The state medical society, under the direction of the University of Michigan Medical School, gives in Detroit postgraduate extension teaching of a formal and continuous character. Instruction is given almost entirely by men from the local profession; payment to instructors is made at the rate of $10 per teaching hour. These men receive $20 per teaching hour, if lecturing at the university.

6. American Medical Directory.[5] Harvey T. Sethman, Executive Secretary, Colorado State Medical Society, personal communication to the author, March 30, 1933.
7. Dr. W. A. LaField: Personal communication to the author, Oct. 20, 1933.
8. Dr. T. Z. Cason, chairman of educational committee, Florida Medical Association, personal communication to the author, April 4, 1933.
9. American Medical Association Bulletin 26:1628 (May 9) 1931.
10. Dr. J. P. Bowdoin, assistant director, Georgia Department of Public Health, personal communication to the author, March 28, 1933.
11. Dr. Harold M. Camp, Illinois State Medical Society, personal communication to the author, Sept. 29, 1933.
12. Thomas A. Hendricks, executive secretary, Indiana State Medical Association, personal communication to the author, March 23, 1933.
13. D. M. Nelson, secretary, Speaker's Bureau Committee, Iowa State Medical Society, personal communication to the author, April 5, 1933.
14. A. T. McCormack, secretary, Kentucky State Medical Association, personal communication to the author, March 25, 1933.

The medical school and state society, in conjunction with the Children's Fund of Michigan, have set up an auxiliary to the University Hospital at Marquette, where a year-round program in the teaching of pediatrics is conducted. About six subcenters have been established where teaching clinics are held at more or less regular intervals by the director of the central unit. (In the first fifteen months this unit cared for some 2,500 children).

Since about 1923, postgraduate clinical conferences of from one to three days have been given in the fifteen congressional districts of the state from one to three times a year. If within 100 miles, only expenses of instructors are paid; if a greater distance is traveled, $25 is added for each day or part of a day occupied. Attendance has averaged about 3,000 in the course of a year.[15]

Minnesota.—A committee appointed by the state medical society (known as the State Committee on Medical Education and Hospitals), cooperating with one appointed by the medical school, determines who shall be in charge of lectures and demonstrations in the various fields and specialties of medicine. In conjunction with the extension division of the university, this committee publishes and distributes to all county societies a booklet containing information relative to the courses and lectures that are available. No salaries are paid. The local county societies guarantee expenses for lecturers, together with a nominal fee to cover the cost of printing, postage and the like.[16]

Missouri.—The state medical association has a committee on postgraduate courses which provides the various county medical societies with speakers. Expenses of the speakers are paid by the association.[17]

New Hampshire.—In 1932 extension teaching, in the form of an obstetric institute, was conducted in each of the several counties by a full time instructor. This institute was sponsored by the state board of health, with the cooperation of the county medical societies. Tuition was free, the expenses being met by the state board of health and the Federal Bureau of Maternal and Child Welfare. To date only a course in obstetrics has been given. County societies have cooperated in organizing this program.[18]

New Jersey.—Postgraduate extension courses are given under the auspices of Rutgers University, which has had charge of the paper work, advertising, canvassing in county medical societies and the like. The regents of the state advanced $10,000 for this work, permitting lectures to be given for $15 a course and $25 for two or more courses ($30 was charged before this appropriation was made). In 1932, instructors were paid $50 per lecture regardless of the number in attendance. In 1932, 820 physicians (almost one third of the total membership) enrolled in twenty-five classes at thirteen centers; courses were given by seventy-seven different instructors—thirty-three from New York, one from Newark, one from Boston, forty-two from Philadelphia. Courses consisted of fractures, applied neurology, newer drug therapy, traumatic surgery, gynecology, medicine, recent advances in medicine, recent advances in surgery, pediatrics, gastro-enterology and obstetrics. In 1933 the same number of courses were given in the same centers, the registration shrank to 600 and, since no appropriation was made by the state, the lecturers received $35 per lecture in order that the lectures might be given to the doctors at the same rate.[19]

New York.—The "Brooklyn idea" was originated in 1922 by the Medical Society of the County of Kings, in cooperation with the Long Island College Hospital. Two extension courses in sections of ten each were given in the spring and fall, on Fridays at 5 p. m. From 400 to 500 physicians usually attended these courses. They also developed a seminar course limited to from four to eight students, covering a weekly session of half a day or a full day each week for six weeks. The extension courses comprised from eight to twelve hours of work, from one to three hours being spent at a hospital in the late afternoon one day each week. Attendance was limited to ten students. Similar work has been carried on by other county societies in New York State.

The state medical society, through its committee on public health and medical education, has conducted one or more six weeks courses in nearly every county of the state. Provision has been made for single lectures or for courses of any length (lectures or lecture and clinic) desired. Their aim is to raise local standards of practice.[5] Instructors are paid $25 per session, plus traveling expenses.

The Medical Society of the State of New York through its committee on public health, has also conducted annual extension courses since 1927. Instruction has been given in from twenty-two to thirty-one counties during this period. That these courses have real value is evidenced by the repeated requests for courses in counties from year to year. The accompanying statistical table taken from the report of the committee for 1931-1932 gives an interesting summary of this work.

This is a major project in medical education; the committee has increased its usefulness to practicing physicians by arranging special one and two day postgraduate courses at various medical schools in New York State. The expense is met by an appropriation from the state society.

Comparative Summary of Work in Graduate Education Under the Auspices of the Committee on Public Health and Medical Education for the Past Four Years

	1927-28	1928-29	1929-30	1930-31	1931-32
Total number of courses	21½	21¼	16	21	20
Total number of lectures	116	105	91	116	115
Number of county medical societies before which courses were given	22	21	19	25	25
Total attendance of all courses	3,268	4,869	3,286	3,520	
Largest attendance for one course	495	836	841	566	
Smallest attendance for one course	42	66	57	59	
Total cost of all courses	$4,504.82	$4,777.67	$3,705.42	$4,868.33	
Average cost per course	215.47	217.96	231.59	233.25	
Average cost per county	205.67	154.10	195.02	155.93	
Average cost per attendance	1.38	0.98	1.12	1.39	

North Carolina.—Extension courses first started in 1916 through the cooperation of the state medical society, the state board of health and the state university, but they were discontinued during the World War. In 1922, extension teaching was resumed by the University Extension Division and the University of North Carolina School of Medicine and was given every summer until 1929. Classes were organized on the circuit plan, each class meeting once a week for from six to twelve weeks. One instructor taught the entire course or three gave instruction for one month each. These doctors were always chosen from outside the state. In eight years there was a total enrolment of 1,341 doctors, whose average attendance was 72.2 per cent. The director of the extension division feels that they lacked funds to provide the best possible teaching service; also, they were unable to reach physicians in remote rural sections because of the necessity of locating classes where the largest enrolment could be secured (in order to finance the work). Tuition ranged from $25 to $40, depending on the length of the course.[20]

Ohio.—The state medical society has, for several years, cooperated with the medical schools of the three universities in Ohio in creating interest among its members in a series of postgraduate lectures arranged by those schools each year. A committee from each of the schools assists the county medical societies in arranging programs.[21]

Oklahoma.—Extension courses have been given by the extension division of the state university in various centers usually grouped conveniently for instructors' travel; fees ranged from $10 to $35; courses have been given in cooperation with the

15. Dr. James D. Bruce, University of Michigan Department of Postgraduate Medicine, personal communication to the author, March 23, 1933.
16. S. B. Solhaug, chairman, State Committee on Medical Education and Hospitals, personal communication to the author, March 31, 1933.
17. Dr. E. J. Goodwin, secretary-editor, Missouri State Medical Association, personal communication to the author, March 28, 1933.
18. New Hampshire State Board of Health Bulletin, July 1932.
19. Dr. J. B. Morrison, secretary, Medical Society of New Jersey, personal communication to the author, March 18, 1933.
20. Dr. R. M. Cruman, director, Extension Division, University of North Carolina School of Medicine, personal communication to the author, May 8, 1931.
21. Don K. Martin, executive secretary, Ohio State Medical Society, personal communication to the author, March 20, 1933.

state medical association, although some were given entirely under the supervision of the school of medicine and the extension division of the state university. Members of the faculty have been paid only expenses in the form of honorariums, except that when an instructor has been employed on full time for from one to two months he has been paid from $750 to $1,000 per month, plus expenses. These courses have been discontinued because the governor of the state withdrew financial support from this division of the state university; also, the entrance of the osteopathic profession to these state-controlled courses caused the immediate cessation of the courses in October 1933.[22]

Pennsylvania.—The state society does not conduct postgraduate courses as such. An annual councilor district meeting is held by each of the eleven councilor districts, at which one or two out-of-state doctors speak. All expenses are paid by the state society. A number of the sixty component county societies conduct graduate courses.[23]

Virginia.—The Medical Society of Virginia began extension teaching in 1929 with the appointment of a committee known as the Department of Clinical Education, whose purpose it was to stimulate educational programs on the part of local medical societies and to furnish competent clinicians. They have had an annual appropriation for three years of $500 from society funds (used for traveling expenses of speakers and for publicity). Later the Department of Clinical Education formed a joint committee on prenatal and postnatal instruction with the Medical College of Virginia and the University of Virginia, with the University Extension Division as the administrative agent. The program of the joint committee was underwritten by a grant of $2,500 from the medical society and a grant of $10,000 from the Commonwealth Fund of New York for the first year, with $5,500 available for the second year. The tuition fee for the course of ten lectures was set at $5.[24]

Washington.—The state medical society endorses an annual course given by the University of Washington. The usual charge is $15 for four or five lectures given within a period of one week. The average annual expense is $2,500; the average attendance is 230.[25]

Wisconsin.—Postgraduate extension teaching was begun on the North Carolina plan in 1917 but was soon changed to the holding of lectures and clinics at any point in which a group organized and asked for them. The Wisconsin Medical Society, the extension division of the University of Wisconsin and the University of Wisconsin Medical School cooperated to give medical extension courses. The tuition fee for the courses offered has been $30 for a series of twelve weekly meetings of two hours each. An advisory committee met twice a year and worked out general plans for courses; the details and budget responsibilities were carried by the extension division; $3,000 per circuit of twelve weeks was collected, which covered the salaries and expenses of the instructors. It was not planned to give the extension courses in 1933, owing to the financial condition of the area.[26]

This information makes no effort to include stated meetings, symposiums, conventions, local medical clubs and the like, all of which are worth while and often educational organizations of high merit. It is necessary to broaden the base of education if the general level of medical service is to be raised. Extension courses help to do this and at the same time present a sound method of helping the individual; they should also educate the profession to the need of systematic resident study at some school. When the profession demands better postgraduate facilities I feel sure that the public will assist in providing the means even as they have for the undergraduate courses.

22. L. W. Kibler, Postgraduate Medical Study, University of Oklahoma, personal communication to the author, Oct. 17, 1933.
23. Walter F. Donaldson, secretary,, the Medical Society of the State of Pennsylvania, personal communication to the author, March 18, 1933.
24. G. W. Entsler, secretary, Extension Division, University of Virginia, personal communication to the author, July 18, 1932.
25. Dr. Curtis H. Thomson, secretary-treasurer, Washington State Medical Association, personal communication to the author, April 6, 1933.
26. Chester D. Snell, dean, University of Wisconsin, University Extension Division, personal communication to the author, July 7, 1932.

SERIOUS ARSPHENAMINE REACTIONS WITH REFERENCE TO THEIR PREVENTION

REPORT OF SIX CASES

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In the past five years I have observed six severe accidents following neoarsphenamine therapy. With the exception of case 4 (service of Dr. S. S. Greenbaum), all were in the service of Dr. Henry B. Shmookler. They constitute a unique assortment of cases, representing as they do every type of serious reaction except exfoliative dermatitis, which may, and frequently does, prove rapidly fatal. The literature on the subject is not so opulent as to make the report of these cases merely supernumerary. Especially is this true of complications such as aplastic anemia (case 1) and transverse myelitis (case 5). Indeed, the universal use of the potent arsphenamines invests this subject with a ubiquitous timeliness. The purport of this report is not, however, to augment the literature with additional case records. It is, rather, to review these cases from the standpoint of prevention and to dissipate the fatalistic notion, held by many, that most if not all disastrous reactions are inevitable. An attempt will be made to show that in four of the six cases cited here the sinister event might have been obviated by the cognizance of apparently innocuous symptoms and signs as the harbingers of impending danger. It may be said briefly that in the therapy of syphilis it is imperative to be conversant with and alive to the significance of minutiae.

APLASTIC ANEMIA

CASE 1.—Mrs. S. L., aged 30, admitted to the hospital, Dec. 29, 1931, for severe headaches of ten weeks' duration, had a strongly positive Wassermann reaction. A roentgenogram showed six circular areas of bone absorption, about 1 cm. in diameter each, in the frontal bones of the skull. Treatment with iodides and with compounds of mercury and bismuth relieved the headaches. After discharge she received twelve injections, at weekly intervals, of 0.6 Gm. of neoarsphenamine. Two weeks prior to her last injection she noted a blue mark on the thigh. An injection was given. One week later a crop of these appeared. This finding was blissfully disregarded and another injection given. Following this, severe purpura occurred. Concomitant with the purpura, generalized mucous membrane bleeding appeared as epistaxis, hemoptysis, menorrhagia, melena and retinal hemorrhage. On readmission, May 13, 1932, pallor was extreme. The blood count showed: hemoglobin, 36 per cent; red blood cells, 1,690,000; white blood cells, 4,700; polymorphonuclears, 44 per cent; small lymphocytes, 55 per cent; platelets, 70,000. No abnormal cells were seen. Reticulocytes were 1 per cent. The icterus index was 6. The bleeding time was forty-seven minutes and the coagulation time, four and one-half minutes. The urine was positive for arsenic. The Wassermann test was now negative. A diagnosis of postarsphenamine aplastic anemia was apparent. During her three months hospital sojourn she received eleven transfusions, about 500 cc. each, the blood count rising to hemoglobin, 76 per cent; red blood cells, 3,700,000; white blood cells, 5,700; polymorphonuclears, 51 per cent; lymphocytes, 49 per cent; platelets, 80,000. Follow up six months later showed complete restoration of the blood to normal.

An anemia in which the hematopoietic system is so suppressed and paralyzed that it causes a marked reduction in all blood elements is aplastic. Of the cases that occur, those that are secondary to roentgen, radium, benzene, trinitrotoluene and arsphenamine poi-

soning outnumber the idiopathic form. In 1919, Labbé and Langlois [1] first described postarsphenamine aplastic anemia as an entity. The condition is rare. McCarthy and Wilson [2] recently reviewed seventy-nine cases of blood dyscrasias following the arsphenamines, thirty-four of which were aplastic anemia. Phelps had two cases out of 272,354 doses. Stephens reported this complication twice in a series of 14,000 injections given to 1,200 patients. Combes [3] had one in 4,000 patients. Farley,[4] in seven years, saw six cases.

Of the various arsphenamines used, neoarsphenamine is responsible for about 65 per cent of the cases, not because of its more peculiar toxicity but probably because of its more frequent use. Sulpharsphenamine is the arch offender. Indeed, Stokes [5] has said: "I have never seen a case of aplastic anemia in an experience numbering more than 100,000 injections until I began to use sulpharsphenamine. Then, like a thunderclap, within a short period of several months, I saw five cases in rapid succession, all due to this drug." Bickford and Tilgham [6] also think that, relative to the total use of sulpharsphenamine, blood dyscrasias follow in its wake with surprising frequency.

The exact pathogenesis of the blood dyscrasias following the arsphenamines is still a mystery. The prevailing opinion incriminates the double benzene ring of the organic arsenicals as the injurious agent. This is predicated on the well known marrow-depressing effect of the benzenes. It is also pointed out that Whelian's case of granulopenia in a child is the only one on record due to inorganic arsenic. Opposition to this theory is based on the uncertain knowledge that benzene actually splits off and that, if it is so liberated, its quantity is less than studies have shown necessary to produce such toxic effects. Some believe it occurs only in patients with a congenitally weak hematopoietic apparatus, since, in comparison with the wide use of the arsphenamines, aplastic anemia is rare. Bronfin and Singerman [7] postulate an idiosyncrasy. This idiosyncrasy may be reflected in the entire hematopoietic system as an aplastic anemia or, by selectivity, in any of its component parts, producing granulopenia or thrombocytopenic purpura as the case may be.

There is no way of predicting the onset of this disease in a syphilitic patient receiving the arsphenamines. It may follow the initial dose, exceptionally, or any one of the subsequent doses. It may follow within twelve to twenty-four hours after an injection, or it may be delayed for several months.

The death rate is exceedingly high. Loveman [8] cites it as 60 per cent. In the thirty-four cases collected by McCarthy and Wilson,[2] the mortality was 83 per cent. Death is not immediate and is due either to repeated hemorrhages or to intercurrent infection consequent on the granulopenia. Recovery, when it does occur, is prolonged and tedious and averages about six months.

The sheet anchor of treatment is repeated transfusions with the objective of tiding over the patient until his own bone marrow begins to regenerate. Duke [9] says that the bone marrow is architecturally simple and can regenerate readily, even if there is marked destruction, provided it gets rid of the primary cause. Farley [4] believes that in many cases there is no actual aplasia but a physiologic paralysis.

In view of the high mortality rate, it is obvious that prophylaxis, when possible, is of paramount importance. In case 1 the purpuric spots were ignored and not regarded as the danger signals, which they truly were. Misinterpreting their significance resulted in two additional injections, which converted into a severe and potentially fatal aplastic anemia what might have otherwise remained a benign and transient purpura simplex. Semenza [10] recognized the gravity of such neglect and urged the systematic examination of the blood even in the absence of untoward clinical manifestations, an opinion concurred in by Bronfin and Singerman.[7] Probably this is not practical. But it is essential, if one wants to avoid an occasional critical issue, to be vigilant and to assess any apparently trivial symptom or sign carefully and scrupulously.

HEMORRHAGIC ENCEPHALITIS

CASE 2.—H. F., a man, aged 30, presented a swollen and painful left ankle joint on admission to the hospital. He had contracted gonorrhea three years before and had had a recurrent urethral discharge since. The ankle joint had been incised before admission and there was still considerable drainage of pus. A gonococcus complement fixation test was positive. The temperature and pulse were only slightly elevated. After conservative treatment for four weeks the ankle joint improved greatly but the left wrist became inflamed. Because of this metastasis, a therapia sterilisans magna in the form of neoarsphenamine was thought worthy of trial, despite the negative Wassermann test. Accordingly, neoarsphenamine 0.3 Gm. was given, March 2, 1928. A macular rash appeared on the face and neck a few hours afterward but was transient. March 9, 0.45 Gm. of neoarsphenamine was administered. Twelve hours afterward the temperature rose to 104 F. and vomiting occurred. The temperature fluctuated at this level and then abruptly rose to 106. The patient became irrational, had generalized convulsions and remained stuporous until his death, March 17. Several lumbar taps were performed, the fluid at first remaining clear and later containing many white cells. No arsenic was obtained in the spinal fluid. Necropsy showed an acute edema of the brain, congestion over the choroid plexus and petechiae in the left basal ganglions.

The distinctive destructive effects of the arsphenamines on the nervous system is expressed by a hemorrhagic encephalitis. In 1911, just a few years after the introduction of the arsphenamines into general use, the first case was reported by Fisher.[11] Of all the arsphenamine reactions, it is the chief cause of death, exceeding exfoliative dermatitis and acute yellow atrophy combined. According to Meierowsky and Kretzner, who reviewed 109 arsphenamine fatalities, 60 per cent were due to encephalitis. Of the twelve deaths reported by Cole, DeWolf and their associates,[12] six were due to this relentless complication. Of thirteen arsphenamine deaths reported in New York State [13] from 1926 to 1931 inclusive, two were due to encephalitis. It is,

1. Labbé, M., and Langlois, S.: Acute Purpura Hemorrhagica from Arsenical Poisoning, Bull. et mém. Soc. méd. d. hôp. de Paris **43**: 786 (July 25) 1919.
2. McCarthy, F. P., and Wilson, Robert Jr.: The Blood Dyscrasias Following the Arsphenamines, J. A. M. A. **99**: 1557 (Nov. 25) 1932.
3. Combes, F. C. Jr.: Purpura Hemorrhagica Following Sulpharsphenamine, Arch. Dermat. & Syph. **15**: 194 (Feb.) 1927.
4. Farley, D. L.: Depressed Bone Marrow Function from the Arsphenamines, Am. J. M. Sc. **179**: 214 (Feb.) 1930.
5. Reports of the Council, J. A. M. A. **99**: 1689 (Nov. 12) 1932.
6. Bickford, J. V., and Tilgham, R. C.: Purpura Haemorrhagica in Congenital Syphilis Following Arsphenamine, J. A. M. A. **100**: 1984 (June 24) 1933.
7. Bronfin, J. D., and Singerman, Isidor: Acute Aplastic Anemia Complicating Arsphenamine Therapy, J. A. M. A. **99**: 1725 (May 14) 1932.
8. Loveman, A. B.: Toxic Granulocytopenia, Purpura Haemorrhagica and Aplastic Anemia Following the Arsphenamines, Ann. Int. Med. **5**: 1238 (April) 1932.
9. Duke, W. W.: Aplastic Anemia, J. A. M. A. **91**: 720 (Sept. 8) 1928.
10. Semenza, Carlo: Aplastic Anemia and Arsphenamine Intoxication, Clin. med. ital. **62**: 527 (June) 1931.
11. Fisher, B.: Ueber einen Todenfall durch Encephalitis haemorrhagica, München. med. Wchnschr. **58**: 1803, 1911.
12. Cole, H. N.; DeWolf, Henry; McCuskey, J. M.; Mickjian, H. G.; Williamson, G. S.; Rauschkolb, J. R.; Ruch, R. O., and Clark Taliaferro: Toxic Effects Following Use of the Arsphenamines, J. A. M. A. **97**: 897 (Sept. 26) 1931.
13. Reports of the Council, J. A. M. A. **99**: 1689 (Nov. 12) 1932.

however, by no means of frequent occurrence. Stokes[14] had only one case in 63,000 injections. Moore, quoted by Brittingham and Phinizy,[15] did not see a single case in 200,000 injections given to 15,000 patients.

Hemorrhagic encephalitis is a grave complication. Death ensues within several hours of the onset or may be delayed for a few days. It has been reported as early as one hour after injection. Only occasionally does a patient survive. Sheppe[16] tells of a patient who, three hours after injection, became drowsy, convulsive and unconscious but recovered. Beeson[17] also cites a case of hemorrhagic encephalitis with recovery. Neoarsphenamine is responsible for more cases than arsphenamine, and sulpharsphenamine is the most culpable, comparative to its use. It occurs in young adults early in the course of treatment, usually before the fourth injection. Its onset is sudden and is characterized by headache, apathy, convulsions and coma. The picture is similar to that of alcoholic wet brain.[18] Pathologically, the brain presents marked edema with extreme diffuse capillary hemorrhages, especially in the regions of the fourth ventricle, pons and corpus callosum. Ehrlich[19] thought that the dilatory and destructive effects of the arsphenamines on the brain were due to insufficient epinephrine as a result of simultaneous arsenical destruction of the suprarenals. Since then, frequent doses of epinephrine have constituted the accepted treatment.

Case 2 may be viewed in two antithetical ways. Since hemorrhagic encephalitis is a sudden, unforeseen and unpredictable catastrophe, it may be maintained that the death was doubtless unavoidable. On the other hand, it should be remembered that the Wassermann test was negative and that neoarsphenamine was given solely to combat a clinical gonococcemia. The question is whether the efficacy of the arsphenamines in septicemias is so established as to warrant their use in these conditions. Those who doubt this may well contend that no drug capable of creating such havoc should be used in disease states in which its beneficence has not been proved. From this angle, the death may with some justification be considered avoidable. Furthermore, it should be recalled that the initial injection of 0.3 Gm. was followed by a maculopapular rash which may have signified some intolerance to the drug and, at the very least, contraindicated an increase in dosage to 0.45 Gm. for the following injection.

ARSPHENAMINE HEPATITIS

Case 3.—Mrs. R. R., aged 25, had a history of two miscarriages and a positive Wassermann test. She had received, in another institution, four injections of neoarsphenamine at weekly intervals, the last dose being given two weeks prior to her admission. Her presenting symptoms were intense pruritus and jaundice. It is important to note that the itching antedated the final injection. Examination revealed diminution of liver dulness. The icterus index was 72. The van den Bergh test gave an immediate direct and biphasic reaction. Urobilinogen was positive in the urine in 1:160 dilution. There was bile in the urine. The latter was positive also for arsenic. With liberal daily dextrose injections intravenously, including a 50 per cent dextrose venoclysis for twenty-four hours, she made a complete recovery within a month after admission.

Case 4.—C. W., a man, aged 28, after exposure to a known syphilitic person, developed a generalized papulosquamous syphilis, especially affecting the palms and soles. The Kolmer and Kahn tests were strongly positive, Jan. 4, 1932. On that day 0.3 Gm. of neoarsphenamine was given. January 7, 1 cc. of bismo-cymol was administered. January 11, 0.45 Gm. of neoarsphenamine was injected. Two days afterward, nausea, vomiting, headache, malaise and generalized erythema appeared. The liver became palpable and a deep jaundice followed. The icterus index was 63. Therapy consisted of injections of a bismuth compound and sodium thiosulphate. The jaundice completely disappeared within two months.

Syphilis, untreated, may be complicated by liver damage. In the secondary stage, when the organisms are widely disseminated, the liver is the depot of a great horde of spirochetes. This manifests itself in a mild, transient icterus and rarely, when the spirochetemia is massive, in an acute yellow atrophy with fatal outcome.[20] Latent syphilis may also cause liver destruction either as a diffuse hepatitis, gummatous formation or cirrhosis. Jaundice was a prominent symptom in the 140 cases of syphilis of the liver reported by O'Leary.[21] It must be remembered that many cases of syphilis of the liver remain unrecognized because, as Mann[22] has shown, 90 per cent of the organ may be destroyed before the symptoms of hepatic insufficiency intervene. It is always necessary to differentiate the cause of jaundice in any syphilitic patient treated with the arsphenamines as to whether it is syphilitic in origin or due to the drug. Scott[23] contends that jaundice in early syphilis is of two types: (1) syphilitic, in which the jaundice occurs as the result of liver cell degeneration before treatment begins, and (2) combined syphilitic and arsenical, in which the causative factor is principally the syphilitic infection, on which is superimposed the toxic action of the arsphenamines.

It is interesting to note that experimentally marked hepatitis by the arsphenamines can be produced only in syphilitic and not in normal animals. There is indubitable proof, however, that the arsphenamines do have an especially hepatoxic factor.

That the arsphenamines and not the arsenic is the probable cause of hepatic insufficiency is deduced from the comparatively few cases of jaundice reported before the extensive use of the former. Filliol,[24] in reviewing this subject, ascertained the fact that icterus in syphilis was uncommon before the introduction of the organic arsenicals. According to the Salvarsan Committee,[25] evidence is accumulating that arsphenamine therapy is followed in practically every instance by a certain degree of hepatic insufficiency susceptible of recognition by special tests, such as the icterus index, although clinical signs of disorder may be absent. Cole, DeWolf and their associates[12] noted icterus in twenty cases in a series of 1,212 patients, with one fatal outcome. In a recent report on a series of 10,021 patients, Wile and Sams[26] showed the incidence of postarsphenamine jaundice to be seven times as great as pretherapeutic jaundice.

All writers agree that the occurrence of jaundice contraindicates the use of the arsenicals. Even in the

14. Stokes: Modern Clinical Syphilology, p. 348.
15. Brittingham, J. W., and Phinizy, Thomas: Hemorrhagic Encephalitis After Neoarsphenamine, J. A. M. A. **96**: 2021 (June 13) 1931.
16. Sheppe, W.: Arsphenamine Encephalitis, West Virginia M. J. **28**: 705 (Dec.) 1930.
17. Beeson, B. B.: Arsphenamine and Neoarsphenamine Plus Adrenalin, Am. J. Syph. **3**: 129 (Jan.) 1919.
18. Wechsler, I.: A Textbook of Clinical Neurology, Philadelphia, W. B. Saunders Company, 1932, p. 400.
19. Ehrlich, Paul: Deaths After Salvarsan, Brit. M. J. **1**: 1044 (May 9) 1914.
20. Wile, U. J.: Syphilis of the Liver, Arch. Dermat. & Syph. **1**: 139 (Feb.) 1920.
21. O'Leary, P. A.: Observations on the Treatment of Syphilis of the Liver, J. A. M. A. **90**: 183 (Jan. 21) 1928.
22. Mann, F. C.: Effects of Complete and Partial Removal of the Liver, Medicine **4**: 419 (Dec.) 1927.
23. Scott, G. O.: Syphilitic and Arsenical Jaundice, Am. J. Syph. **3**: 628 (Oct.) 1919.
24. Filliol, L.: Arch. dermato-syphilographiques **2**: 597, 1930.
25. Toxic Effects of Arsenobenzol Preparations, Brit. M. J. **2**: 184 (July 29) 1922.
26. Wile, U. J., and Sams, N. W.: A Study of Jaundice in Syphilis, Am. J. M. Sc. **187**: 297 (March) 1934.

absence of jaundice, if any liver damage is suspected the use of the arsphenamines should be interdicted as a dangerous drug. That itching often precedes the onset of jaundice is a point of singular relevancy. It will be remembered that patient 3 was given one dose of neoarsphenamine after itching had already insinuated itself into the clinical picture. That this additional dose might have precipitated the hepatitis, certainly aggravated it, is beyond doubt. Here again emphasis must be placed on the formidable significance of an innocent symptom, disregard of which may render one injection of a useful drug into a powerful weapon of destruction.

TRANSVERSE MYELITIS

Case 5.—Mrs. E. K., while hospitalized for a disorder in the upper part of the abdomen, was found to have a positive Wassermann reaction on two occasions. Two doses of 0.45 Gm. of neoarsphenamine were administered, one week apart. On the afternoon following the second dose the temperature rose to 103 F., the pulse became rapid, and pain in the upper part of the abdomen associated with vomiting occurred. The fever continued and two days later a diffuse macular rash appeared over the entire body. The following day she complained of pain in both legs and moved them with difficulty. This soon developed into a complete flaccid paralysis of both lower limbs. There was also sphincteric involvement with complete retention of urine. The spinal fluid showed 25 white blood cells and the Wassermann reaction was strongly positive. The paralysis was due to a transverse lesion localized around the mid-dorsal region and was considered as a focal reaction or therapeutic shock. Antisyphilitic treatment in the form of iodides and compounds of bismuth and mercury was intensively applied and, in spite of the gloomy prognosis, gradual recovery fortunately ensued. Nine weeks after admission the patient was able to walk, and sphincteric control was completely regained.

This case of transverse myelitis represents the rarest variety of the arsphenamine complications. Its symptoms can hardly elude recognition. Curiously, cases presenting the symptoms of encephalitis occasionally show necroscopic changes in the cervical cord alone. Spiethof and Frank, quoted by Socin,[27] have both reported such cases. Recovery is rare. Some cases become chronic but most terminate fatally as a result of bedsores, bronchopneumonia or an ascending paralysis. According to Rabut,[28] arsphenamine myelitis can be divided into three groups. Group 1 consists of those cases in which the symptoms appear almost immediately after an injection and may be accompanied by transitory pains in the legs or paraplegias, which disappear quickly, often in twenty-four hours. These cases must be considered as a radiculomedullary form of a nitritoid crisis. Four such cases are reported by Pinard.[29] Group 2 consists of those cases in which the symptoms are due to medullary syphilis, which is reactivated, precipitated or energized by the drug; i. e., a Herxheimer reaction or therapeutic shock. This appears in patients with acute secondary syphilis or in old syphilitic persons who have not been treated for a long time. Group 3 is composed of those cases in which the symptoms are due to the toxic action of the drug alone. Schmorl[30] reported several cases with numerous foci of softening in the spinal cord due to arsenical intoxication. Chiari[31] described a case of dorsal myelitis in which at autopsy he ruled out syphilis by the lack of inflammatory or exudative changes, embolism and thrombosis, by the absence of vascular changes and because of the purely necrotic appearance of the lesion concluded that it was due solely to arsenical intoxication. The existence of this group is doubted by many. Myelitis following the arsenicals is ascribed by Stokes,[32] Newmark[33] and Mingazzini[34] to therapeutic shock.

The question as to whether myelitis is due to an intoxication or to a Herxheimer flare up is not merely academic because it has an important bearing on treatment. If toxic, further arsenical treatment must be omitted; if a Herxheimer flare up, permissible and indicated. Devic reported a case in which continued arsphenamine treatment ultimately yielded a cure. Pinard's[29] cases improved with arsphenamine therapy. Greenbaum advised further treatment with arsenicals in case 5, which, however, showed complete disappearance of symptoms under preparations of bismuth and mercury and the iodides alone.

ANEURYSM OF THE AORTA WITH RUPTURE

Case 6.—S. N., a man, referred to the medical clinic, March 29, 1932, complained of a burning sensation in the region of the upper sternum. He had received, in the skin department, two injections of 0.45 Gm. of neoarsphenamine, March 21 and 28. He gave a history of a penile lesion in 1922. The Kolmer and Kahn tests were strongly positive. Examination disclosed increased supracardiac dulness and a systolic murmur at the base transmitted to the carotids. Aneurysm of the arch of the aorta was suspected. An order for a roentgenogram of the chest was not consummated. Nevertheless, April 4, he received another dose of 0.45 Gm. of neoarsphenamine. That day severe precordial pain developed. April 6 he walked five blocks to the hospital, where, on his arrival, he was seized with an agonizing stenocardia, after which symptoms of profound shock supervened. Orthopnea was extreme. The following day he died during another attack of precordial pain. Necropsy showed a large saccular aneurysm of the arch of the aorta, which had ruptured into the mediastinum. The coronary arteries were normal.

That aneurysms may rupture spontaneously is, of course, indisputable. It may be argued, then, that the rupture of the aneurysm was merely coincidental with the arsphenamine therapy, thus denying the apparent relationship of cause and effect. The occurrence of rupture following quickly on the heels of vigorous antisyphilitic remedies has so often been noted, however, that it inveighs heavily against such an assertion and makes it well-nigh untenable. Stokes[35] had two deaths from ruptured aneurysm within twenty-four hours after injection. It is because of such notoriously appalling effects, which some practitioners experience while others do not, that the literature on the subject of treatment of cardiovascular syphilis is so chaotic and confusing. After careful scrutiny, two main currents of thought can be distinguished. One consists of the belief that by the use of arsphenamines better results can be achieved than without them. Moore and Danglade[36] state that the duration of life in their patients so treated was sixty-nine months as compared with nine months in untreated patients. Similar results

27. Socin, C.: Ueber Salvarsan Myelitis, Cor.- Bl. f. schweiz. Aerzte **46**: 1570 (Nov. 18) 1916.
28. Rabut, R.: Paraplegia During Course of Treatment with Arsphenamine, Rev. gen. de clin. et de therap. **46**: 789 (Nov. 26) 1932.
29. Pinard, M.: Paraplegia Following Arsenical Treatment, Bull. Soc. franç. de dermat. et syph. **26**: 253 (July 10) 1919.
30. Schmorl, G.: Encephalitis Haemorrhagica nach Salvarsan Injektionen, Gesellsch. f. Natur u. Heilkunde **271**, April, 1913.
31. Chiari: A Myelitis After Salvarsan Injection, Verhandl. d. deutsch. path. Gesellsch., 1913, pp. 155-161.
32. Stokes: Modern Clinical Syphilology, p. 342.
33. Newmark, L.: Softening of the Spinal Cord in a Syphilitic After an Injection of Salvarsan, Am. J. M. Sc. **144**: 848 (Dec.) 1912.
34. Mingazzini, G.: Clinical and Pathologic and Anatomic Aspects of Hemorrhagic Encephalitis Following Arsphenamine Injections, Deutsch. Ztschr. f. Nervenh. **104**: 1, 1928.
35. Stokes: Modern Clinical Syphilology, p. 844.
36. Moore, J. E.; Danglade, J. H., and Reisinger, J. C.: Treatment of Cardiovascular Syphilis, Results Obtained in 53 Patients with Aortic Aneurysm and in 112 with Aortic Regurgitation, Arch. Int. Med. **49**: 879 (June) 1932.

were obtained by Pinard[37] and by Conybeare.[38] Notable success has also been reported by Cotton[39] and by Hazen.[40] Keidel and Kemp[41] do not deem the poor prognosis in aneurysmal dilatation a deterrent to the use of the synthetic arsenicals. Vaquez[42] says: "In severe cases of cardio-aortic syphilis there should be no hesitation in resorting to neoarsphenamine. I have used it frequently without harm." Sir Thomas Lewis[43] is not averse to its use. None of these men fail to stress that very small doses should be given. It is especially noteworthy that practically none had the temerity to administer the arsphenamines without an adequate preliminary treatment with iodides and mercury or bismuth compounds. Smith[44] emphasizes the particular importance of precluding the possibilities of therapeutic shock by using the milder antisyphilitic treatments before arsphenaminizing the patient. East and Bain[45] recommend the prolonged use of iodides and mercury compounds as a wise precaution and necessary procedure.

The men who hold the second opinion believe that the use of arsphenamines in cardiovascular syphilis is positively dangerous and sedulously avoid them. That more harm than good can result from intensive measures is asserted by Warfield.[46] Meyer[47] describes examples of fatalities from the rapidly acting arsphenamines. That arsphenamine makes aneurysmal cases worse is contended by Bullrich.[48] Donzelot[49] concurs with him fully. Coombs[50] voices a definite objection to the use of the arsphenamines in advanced aortitis. All these, and others, invoke to their aid the deaths reported from therapeutic shock and the therapeutic paradox.

When such decided difference of opinion exists it is perhaps wise to adopt a course between the two extremes. The keynote should be summed up in one word—conservatism. A sane middle course is charted by Paul White,[51] who advises from six to eight weeks of mercury compounds and iodides to be followed by small doses of neoarsphenamine, beginning with a dosage of 0.1 Gm., cautiously increased to 0.4 Gm.

Was the death of patient 6 avoidable? The large initial dosage of 0.45 Gm. of neoarsphenamine and the failure to prepare the patient for the reception of this drug by the use of milder antisyphilitic treatment compel an affirmative answer. This procedure violated the two important tenets on which there is virtual unanimity of opinion by those who advocate the use of the arsphenamines; namely, small dosage and preparatory administration of the iodides and compounds of bismuth or mercury. The disastrous complication of ruptured aorta can be forestalled only by a discriminating use of the potent arsenicals in syphilis of such vital structures as the heart and aorta.

37. Pinard, M.: Bull. et. mém. Soc. méd. d. hôp. de Paris **51**: 1711 (Jan. 5) 1928.
38. Conybeare, J. J.: Guy's Hosp. Rep. **74**: 163 (April) 1924.
39. Cotton, T. F.: Cardio-Aortic Syphilis: Treatment, Brit. M. J. **1**: 855 (May 22) 1926.
40. Hazen, H. H.: Treatment of Cardiovascular Syphilis, Am. J. Syph. **16**: 289 (July) 1932.
41. Keidel, Albert and Kemp, J. E.: Treatment of Visceral Syphilis, J. A. M. A. **82**: 299 (Jan. 26) 1924.
42. Vaquez, Henri: Diseases of the Heart, Philadelphia, W. B. Saunders Company, 1924, p. 313.
43. Lewis, Thomas, Diseases of the Heart, New York, Macmillan Company, 1933, p. 221.
44. Smith, C. M.: The Treatment of Syphilitic Cardiovascular Disease, New England M. J. **208**: 185 (Jan. 26) 1933.
45. East, C. F. T., and Bain, C. W. C.: Recent Advances in Cardiology, Philadelphia, P. Blakiston's Son & Co., 1929, p. 221.
46. Warfield, L. M., in Tice, Frederick: Practice of Medicine, Hagerstown, Md., W. F. Prior Company, Inc. **6**: 26, 1921.
47. Meyer, A.: Die Behandlung der Aorten- und Herzsyphilis, Munchen med. Wchnschr. **77**: 928 (May 30) 1930.
48. Bullrich, R. A.: Treatment of Cardiovascular Syphilis, Rev. méd. latino-am. **13**: 939 (March) 1928.
49. Donzelot, E.: L'abus des médicaments antisyphilitiques dans le traitement des affection cardio-vasculaires, Bull. et mém. Soc. méd. d. hôp. de Paris **51**: 1530 (Dec. 1) 1927.
50. Coombs, C. F.: Diagnosis and Treatment of Syphilis of Aorta and Heart, Quart. J. **1**: 179 (Jan.) 1932.
51. White, P. D.: Heart Disease, New York, Macmillan Company, 1931.

SUMMARY

1. One case of aplastic anemia developed under neoarsphenamine therapy when two injections were given after purpura appeared.

2. In one of the two cases of hepatitis, one injection of neoarsphenamine was given after the patient complained of itching.

3. Hemorrhagic encephalitis occurred as a complication in a case of gonorrheal arthritis with a negative Wassermann reaction in which two doses of neoarsphenamine were given in increasing doses, although an eruption followed the first dose.

4. In a case of aneurysm of the aorta, rupture followed neoarsphenamine therapy, which was too vigorous and not preceded by a preparatory course of the milder antisyphilitic drugs.

5. A case of transverse myelitis, due to a rare and usually fatal form of Herxheimer reaction, terminated in complete recovery.

6. A large proportion of fatal or disabling reactions may be prevented by a careful evaluation of symptoms and signs as they appear in syphilitic patients under treatment with the arsphenamines.

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THE USE OF DIPHTHERIA TOXOID IN IMMUNIZATION OF MEDICAL STUDENTS AND NURSES

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The occurrence of diphtheria in medical students and nurses is a significant problem. While the susceptibility rate in this age period is not as high as in children under 10 years of age, the number of susceptibles among individuals 20 years of age and older is sufficiently high to warrant an attempt at immunization, especially since they are exposed frequently to this disease. Toxin-antitoxin has been usually employed in the United States for immunization of students and nurses against diphtheria. The experience with toxin-antitoxin in the immunization of nurses in the Vanderbilt University Hospital has not been satisfactory in that nine out of twenty-four Schick positive nurses receiving from three to four doses of toxin-antitoxin gave a positive reaction approximately six months after receiving the injections, and one of the group developed nasal diphtheria following three doses of toxin-antitoxin.

The effectiveness of this agent has varied in producing immunity. From 50 to 75 per cent of children given three injections have been reported by Park and Schroder [1] as showing a negative Schick test following immunization. Volk [2] has reported that 65 per cent of 8,000 children given three injections of 1 cc. each of

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1. Park, W. H., and Schroder, M. C.: Diphtheria Toxin-Antitoxin and Toxoid Comparison, Am. J. Pub. Health **22**: 7-16 (Jan.) 1932.
2. Volk, V. K.: Diphtheria Immunization by Three and Four Injections of Toxin-Antitoxin in Comparative Trend of the Immunizing Process, Am. J. Pub. Health **21**: 884-889 (Aug.) 1931.

toxin-antitoxin mixture were immune at the end of one year. He advocated giving four doses of toxin-antitoxin, and by this procedure a higher percentage of children were Schick negative at the end of one year as compared with a similar group given three injections of toxin-antitoxin. In his investigations, 64.4 per cent of children given three doses of toxin-antitoxin were Schick negative at the end of one year and 85 per cent were negative at the end of two years. Following four doses of toxin-antitoxin, 74 per cent were Schick negative at the end of one year and 92 per cent were negative at the end of two years.

Rhoads [3] has reported that fourteen of twenty-nine cases of diphtheria in nurses occurred in those who had received from three to six injections of toxin-antitoxin from three months to two years prior to the onset of the disease. He emphasized the variation in potency of the different brands of toxin-antitoxin in use at that time. Lintz [4] has reported a reversal of the Schick reaction in 55.4 per cent of a group of nurses who had received five injections.

Harrison,[5] in a carefully controlled investigation, has shown that following three injections of 1 cc. each of toxin-antitoxin mixture, standard strength, 65 per cent of children became Schick negative, while under similar conditions in another comparable group of children 95 per cent became Schick negative following two injections of diphtheria toxoid. The Dicks [6] in 1929 emphasized the advantages of toxoid in the immunization of adults against diphtheria. They reported that diphtheria toxoid as prepared by Ramon and given in three doses was a better immunizing agent than 0.1 L + diphtheria toxin-antitoxin mixture even when five doses of the latter were given.

Results Following the Use of Diphtheria Toxoid in Medical Students and Nurses

Number of Individuals Injected	Amount Injected, Cc.	Number of Doses	Number Positive to Schick Test Before Immunization	Number Negative to Schick Test After Immunization
65	1.8	3	65	65
9	1.3	3	9	9
3	1.1	3	3	3
2	0.8	3	2	2
8	0.24	4	8	8
4	0.19	3	4	4
1	0.07	3	1	1
72			72	72

The advantage of diphtheria toxoid as compared with toxin-antitoxin mixtures as an immunizing agent are well known. Its use, however, has been confined mainly to children under 8 years of age, owing to the severe local and general reactions that have been reported in older persons. For immunization of older children and adults, toxin-antitoxin is still advocated. Owing to the relatively low percentage of individuals immunized and the variation in potency of toxin-antitoxin, its effectiveness in the immunization of young adults is probably not as great as in children. It is also likely that young adults are more refractory to immunization, since the susceptibles in that age period represent those who have failed to become immunized through natural processes.

For the past few years an average of 28.8 per cent of medical students at the Vanderbilt University School of Medicine and 24.2 per cent of nurses at the Vanderbilt University School of Nursing have been found to be susceptible to diphtheria as determined by the Schick test. A control test with heated diphtheria toxin was done on each individual tested, as we were dealing with an age group in which pseudopositive reactions were more likely to be found than in children. It was decided to immunize the positive reactors with diphtheria toxoid by the method advocated by the Connaught Laboratory in Canada. The toxoid (anatoxin-Ramon) and dilute toxoid were obtained from the Connaught Laboratories of the University of Toronto.

In order to avoid severe local and general reactions, the toxoid skin reaction test was given to each positive individual before any immunizing substance was injected. This test consists of an intradermal injection of 0.1 cc. of a 1 : 10 dilution of toxoid. If no reaction consisting of an area of redness more than one-half inch (13 mm.) in diameter developed within three days, the individual was given undiluted toxoid in the usual dosage If a skin reaction did occur, increasing doses of diluted toxoid were given.

The results reported in this study were obtained over a period of one year. Only those persons who had a positive Schick test were immunized, the control test with heated toxin being negative in each instance. Before immunization was begun, each individual was given a test dose of 0.1 cc. of a 1 : 10 dilution of toxoid. The results in each group were the same, so that the analysis for the combined group will be given. Those who reacted to the toxoid skin test were given diluted toxoid and those who showed no reaction were given undiluted toxoid.

During this period, forty-six medical students and twenty-six nurses were given from two to four injections of toxoid. Those receiving undiluted toxoid were given three injections at intervals of three weeks, beginning with 0.3 cc. for the first dose, 0.5 cc. for the second and 1 cc. for the third dose. This was the usual procedure with respect to undiluted toxoid except when there was any complaint as to the severity of the previous reaction, under which circumstances the dose was reduced. The first dose of diluted toxoid given to the "reactors" was 0.2 cc. Each successive dose was usually double the previous one unless the reaction was severe enough to be of significance. The entire group was retested with the Schick and control tests from three to six months following the last injection.

Of the seventy-two individuals immunized, fifty-nine received undiluted toxoid and thirteen received diluted toxoid. The results obtained with these agents are shown in the accompanying table. The actual amount of toxoid given to each individual is reported in order to show the response to small doses of this agent.

Of the seventy-two individuals immunized fifty-nine, or 83 per cent, received toxoid in amounts varying from 0.8 to 1.8 cc. in two or three doses and in all of them a reversal of the Schick test occurred in from three to six months from the date of last injection. Of the thirteen persons receiving toxoid in small amounts, twelve were given from 0.1 to 0.24 cc. in three or four doses and a reversal of the Schick test occurred in each one within the same time limits. One nurse received

3. Rhoads, P. S.: Commercial Preparations of Diphtheria Toxin-Antitoxin: Protecting Value in the Nurses of Cook County Hospital, J. A. M. A. **90**: 254 (Jan. 28) 1928.

4. Lintz, Joseph: Toxin-Antitoxin in Immunization in Adults, Internat. Clin. **4**: 160-170 (Dec.) 1930.

5. Harrison, W. T.: Advantages of Toxoid in Diphtheria Prophylaxis, Am. J. Pub. Health **22**: 17-24 (Jan.) 1932; The Immunizing Value of Diphtheria Toxin-Antitoxin Mixture and of Diphtheria Toxoid, Pub. Health Rep. **45**: 1883-1888 (Aug. 15 part 2) 1930.

6. Dick, G. G., and Dick, Gladys H.: Immunization Against Diphtheria: Comparative Value of Toxoid and Toxin-Antitoxin Mixtures, J. A. M. A. **92**: 1901-1903 (June 8) 1929.

0.07 cc. of toxoid in three doses and a negative Schick test was obtained following these injections. She had a positive Schick test two years prior to the present immunization and had received one injection of 1 cc. of toxin-antitoxin at that time. She was not given any further injections of toxin-antitoxin because of the severe reaction.

The experience in this series in those individuals receiving small doses of toxoid is in agreement with that of Fraser,[7] who has reported a marked increase in the antitoxin response in certain persons who are skin sensitive to toxoid and who probably had, prior to immunization, some antitoxin in the blood resulting from a previous primary stimulus. In one of Fraser's groups there were twenty-three persons whose diphtheria antitoxin titer was less than one-fiftieth unit per cubic centimeter of blood. Following the injection of from two to five small doses of toxoid, the antitoxin in titer was increased in all but one to the accepted level necessary to produce a negative Schick test. The total amount of toxoid injected in the present series of reactors was comparable to that injected in Fraser's series.

The reactions following these injections were on the whole mild. No student or nurse developed local or general reactions of sufficient severity to be absent from routine duties. Those in whom symptoms occurred complained of tenderness and pain at the site of injection, headache, slight to moderate rise in temperature, general malaise, and occasional abdominal discomfort. It was unusual for these complaints to incapacitate the individual and they cleared up as a rule within twenty-four to thirty-six hours, leaving only slight evidence of local reaction. The symptoms usually occurred after either the first or the second injection. It was not necessary to discontinue the injections in any one on account of undesirable reactions.

COMMENT

It is interesting that in every adult individual in this series a reversal of the Schick test from positive to negative occurred following injections of small to relatively large amounts of diphtheria toxoid in from two to four doses. The materials used were obtained from reliable sources and the toxoid and Schick testing material used was from the same lot and the testing and injections were done by the same persons. That the Schick test material used was potent is evident by the fact that positive tests were obtained in a group of children with the same material a few days before the present group was tested. Susceptible students were also tested with the same material and positive Schick tests were obtained. A majority of those who received the injections of toxoid were given another Schick test and each person was Schick negative on retest. The results obtained are in all probability due to the injections of toxoid, but one cannot altogether rule out the possibility that some degree of immunization resulted from contact with persons carrying diphtheria bacilli or with cases of the disease since the injections of toxoid were begun. While the latter is a possibility, most of the students and nurses in this series were either in the first or second year of their courses and the possibility of contact with cases of diphtheria was not as great as in students and nurses in the third and fourth years.

In the older age groups a control skin test should be done at the same time as the Schick test. Dilute toxoid may be used as control skin test material instead of heated diphtheria toxin, making it possible to determine susceptibility to diphtheria and at the same time to detect those persons who would develop undesirable reactions following an injection of toxoid.

CONCLUSIONS

1. The results reported show that it is possible to immunize students and nurses against diphtheria with diphtheria toxoid without producing any undesirable general or local reactions. The same procedure can be applied to the civil population under conditions in which immunization against diphtheria is indicated.

2. By testing intradermally with a skin test dose of dilute toxoid each person in the older age groups who has a positive Schick test, those individuals in whom a severe reaction would occur following a subcutaneous injection of toxoid can be detected.

3. Those who have a negative toxoid skin test can be given the usual dosage of diphtheria toxoid, while the dilute toxoid should be given to those who have a positive toxoid skin test or "toxoid reaction test."

4. These observations emphasize the desirability of using diphtheria toxoid to replace diphtheria toxin-antitoxin mixture as an immunizing agent.

7. Fraser, D. T.: The Response to the Injection of Small Doses of Diphtheria Toxoid in Man, Tr. Roy. Soc. Canada, section V, 1931, pp. 193-195.

THE PRESCRIBING OF DEXTROSE PHLEBOCLYSIS

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Dextrose phleboclysis [1] is, in certain conditions, a life-saving measure. It would be a shocking revelation could statistics be collected as to the number of people who annually die from hypohydration of the system, when their lives might have been spared by the parenteral administration of 5 per cent dextrose solution, of the number of patients lost from hypochloridation when dextrose-saline phleboclysis might have prevented their death, the number of ketosis deaths that might not have occurred had dextrose been given, and the occasional life that might have been saved by osmotherapy. What is no less pathetic is that, in instances, lives are lost in the conditions mentioned even though dextrose solution was administered, simply because the patient was not given enough, or because the remedy was not employed early enough, or because the solution administered was not of the proper composition.

The reasons are not far to seek. Dextrose infusion has been but recently introduced into the practice of medicine, and there may be some physicians who still consider it a passing new fangled notion. Then there is the conviction that this is essentially a hospital procedure entirely unsuited to medical practice in the home. Likewise, the idea exists that it is impossible to secure properly prepared solutions in convenient containers for emergency administration in the home and that there are inherent difficulties in the procedure itself requiring meticulous technic difficult to master. That all these reasons are fallacious can be easily

1. The term "phleboclysis" has been proposed by Reginald A. Cutting (The Place of Dextrose Phleboclysis in Surgery, New Orleans M. & S. J., July 1933, p. 238) instead of venoclysis, which is a hybrid word, vena being of Latin, and klysis of Greek derivation. It is also high time that, at least in medical literature, the word "glucose," which the U. S. Pharmacopeia applies to an impure product unsuitable for the purpose, be abandoned for the pharmacopeial term "dextrose."

demonstrated. As an abundant and ever increasing literature shows, the procedure is not only eminently rational but also supported by a mass of clinical experience; and the indications as well as contraindications are becoming well recognized. Manufacturing technic has simplified the administration to such an extent that dextrose phleboclysis is not much more difficult or troublesome than the intravenous injection of an antiserum and is less dangerous. Just as antitoxins are nowadays universally sold in syringe packages, so are these solutions available in containers ready for convenient administration, in practically every hospital; and they could be kept in drug stores, would the demand justify it.

As the matter of the preparation and administration of the solutions is now well standardized,[2] space need not here be sacrificed in its discussion. Suffice it to say that it is not so much "triple distillation"[3] which is needed as that the water must be properly and freshly distilled just before final sterilization in order to avoid contamination with fever producing substances ("pyrogens") that may be produced in distilled water within a few hours by the growth of certain bacteria that it seems almost impossible to prevent getting into the fluid during the necessary manipulations. This pyrogen readily passes over with the distillate in the ordinary still unless a water spray trap is employed during the distillation. A single proper distillation will render water nonpyrogenic, while even after repeated ordinary distillation it may still be pyrogenic. The rubber tubing should be rinsed with pyrogen-free water and properly sterilized shortly thereafter. The ingredients employed in the preparation of the solutions must be chemically pure and free from contamination and caramelization. The glassware should be "Pyrex" or Jena glass. It has also been quite definitely shown that the rate of injection has a great deal to do with untoward reactions; and that the best way to prevent "speed shock" is by the drip method of administration; i. e., that the individual drops be counted by means of a rectal drip bulb. Hypertonic solutions should be given more slowly than isotonic solutions. The solution in the container should, as a rule, be at 120 F. and the container surrounded by a hot water bottle or similar device to maintain this temperature. It will lose from 15 to 30 degrees F. before it is delivered into the vein. It must be assumed that all these matters are taken care of, so that attention may be directed here most especially to the prescribing of the proper composition of solutions to meet, with the smallest possible number of different stock solutions, the various individual indications of patients in need of this procedure.

HYPOHYDRATION[4]

As with other remedies, the dose of dextrose phleboclysis is "dose enough" and in this case quite a bulk, generally a liter. The daily water turnover has been estimated at more than 16 liters. This includes, of course, the secretions that are reabsorbed as well as the lymph that returns the water it drains from the blood. When the ingestion of water becomes impossible, e. g., after operations, it is difficult to supply water fast enough by rectal administration, subcutaneously or intramuscularly; and, if any degree of emergency exists, it must be given intravenously. In this connection, the danger of delay and of dallying with methods inadequate to meet the situation must be pointed out. Irreversible changes and vicious circles may become established. When capillaries are insufficiently supplied with blood for some time, the increased vascular tone produced by vasomotor nerve excitation gives way to vasodilatation, probably from the local production of histamine-like bodies; and, in consequence of the action of these, the capillaries also become leaky, thus still further aggravating the deficiency of circulating fluid, still more depressing the low blood pressure and increasing the evil results of the general hypohydration. An infusion given twenty-four hours too late may be incapable of relieving this vicious circle on account of irreversibility of the change. It is necessary for the physician to be ever conscious of his patients' need of water. For the maintenance of life, water is only second in importance to oxygen, and it is much more vitally important than food. The responsibility rests with physicians and nurses of assuring the sick person a sufficient intake of fluid. Just as the development of an "aseptic conscience" is a medical and surgical requisite, so medical people and surgical as well must be made "water-need conscious," whenever normal ingestion of fluid is interfered with.

Normally, water enters the system only through the mouth; and, as soon as the patient cannot get all the water he asks for and still more especially if he cannot ask for it, care must be taken that he receives a sufficiency of it in some way or another. In the conscious individual, thirst is a fairly delicate indication of hypohydration. Considering the urgency of this sensation, mere humaneness should dictate its gratification. Even more important is the fact that relief of thirst may mean the prevention of collapse. A patient is therefore not properly cared for if he is permitted to suffer the torments of thirst. Particularly serious is the fact that unconscious or semiconscious patients, as a rule, do not get enough water. In all cases of serious sickness, the best way of assuring an adequate fluid income is not only to prevent thirst but also to aim at an excretion of a quantity of at least 1,000 cc. of urine in the twenty-four hours. Whenever the quantity of urine falls below this, the nurse should call the physician's attention to this fact, and measures should promptly be instituted to correct the deficit, which should always be possible unless the kidney itself or its circulation is at fault. The twenty-four hour quantity of urine should therefore be as regularly recorded in critically sick patients as is the pulse and temperature rate.

The water should, of course, be given by mouth, if possible; but conditions often arise when peroral administration is required. Even if the patient can swallow, water does not quench thirst as long as it stays in the stomach; for the stomach does not absorb water. Hence the patient in shock should be merely given sips of hot water frequently enough to minimize the suffering from thirst but not enough to distend the stomach, which may induce vomiting that aggravates the shock. At the same time, adequate fluid income by other channels must be taken care of, for so-called secondary shock is often nothing more or less than hypohydration collapse, which might be prevented or lessened by giving, as soon as the primary shock is under control (and not before) retention enemas; or, if these are not successful, hypodermic, intramuscular

2. Thompson, S. A.: Preparation of Dextrose and Saline Solutions and Apparatus for Intravenous and Subcutaneous Use, Am. J. Surg. **21**: 127 (Oct.) 1933.

3. Elser, W. J., and Stillman, R. G.: The Fetish of Triply Distilled Water, J. A. M. A. **100**: 1326 (April 29) 1933.

4. "Hypohydration" seems a better word to employ here than the more commonly used word "dehydration," because, strictly speaking, life would cease long before dehydration could occur.

or intravenous injection of dextrose solution, in accordance with the seriousness of the emergency.

It must be remembered that the sudden loss of 10 per cent of the water of the body results in serious disorders, and the loss of from 20 to 22 per cent means death. The daily intake probably cannot be reduced much below 600 cc. for any length of time. The minimal desirable daily income of water may be estimated at 1.5 liters, but increased loss of water by sweating or purging increases the quantity required—may easily double it. Hence striving to secure the elimination of a sufficient quantity of urine is the most rational method of assuring adequate fluid intake.

Nothing seems more absurd than the thoughtless routinistic use of so-called physiologic solution of sodium chloride for the relief of thirst, or systemic hypohydration. Shipwrecked sailors have died from thirst with "water, water everywhere, nor any drop to drink." Even though 0.85 per cent salt solution is of much lower osmotic tension than sea water, the very fact that it is isotonic with the blood makes it that much less thirst quenching than plain water. Who would like to quench his thirst on a hot summer day with liberal libations of so-called physiologic salt water?[4a] And that is what physicians treat their thirst tortured patients to. When, in the early days of its use, this solution was the normal (really decinormal 0.50 per cent) salt solution it was more thirst quenching than after it became known that, to be iso-osmotic with the blood serum, it had to be 0.85 per cent and was made to carry this concentration. Not only is this "physiologic" salt solution a poor thirst quencher, but when from 2,000 to 3,000 cc. of it is given in twenty-four hours the kidney must eliminate this 17 or 25.5 Gm. of sodium chloride; and, when the kidney is diseased or poorly supplied with blood, this is a distinct burden to it and to the system. An isotonic sugar solution, on the other hand, releases the water associated with it the moment the dextrose is oxidized to carbon dioxide and water, which, being eliminated by the lungs, do not burden the kidney. The proper strength of this solution is in round numbers 5 per cent (more accurately, 5.1 per cent anhydrous dextrose). It preserves the shape of red blood corpuscles. In point of fact, the concentration that produces no observable change in the erythrocytes lies between 3.5 and 6 per cent.[5] Laking occurs with concentrations below 3.5, and crenation appears at 7 per cent. Therefore, whenever it is necessary to combat hypohydration, whenever one aims to quench thirst by intravenous injection, a 5 per cent dextrose solution should be infused. The temperature of the solution as delivered into the vein may range between 70 and 120 F. To patients with high temperature a relatively cool solution may be given, which tends to lower body temperature. It also lowers blood pressure. Solutions above 98.6 F. tend to raise blood pressure. In patients with subnormal temperature and most especially in shock, the higher temperature should be aimed at.

HYPOCHLORIDATION

Only second in importance to water in the medium surrounding the cells are the sodium and the chloride ions. When chloride deficiency in the system is spoken of, a sodium deficiency is naturally also implied, for in the body the sodium ion occurs in an almost equivalent quantity (or rather in slight excess, in the form of bicarbonate). An elaborate mechanism exists to maintain the chloride percentage in the blood at a remarkably constant level (between 0.349 and 0.387 per cent). Nevertheless, hypochloridation of the system does occur, most especially after obstinate emesis, profuse diarrhea, extreme sweating or copious exudation, as in extensive burns. Haden and Orr[6] have demonstrated conclusively the great remedial value of sodium chloride in the hypochloridemia of intestinal obstruction.

As in all these conditions a tendency to ketosis also exists, it seems reasonable to administer dextrose as a routine procedure along with the saline solution. On the other hand, it would be a serious error to administer dextrose solutions alone in conditions of hypochloridation, for dextrose phleboclysis tends to reduce the percentage of chloride not only in the blood but also in the lymph.[7] Whenever salt starvation is present or threatened, dextrose-saline phleboclysis should be practiced, as pure dextrose solution increases the salt deficit. In order not to make the solution excessively hypertonic, its formula should be 5 per cent dextrose in physiologic solution of sodium chloride.

When much salt is lost, the secretory activity of the kidney becomes impaired and the quantity of urine is much diminished, nonprotein nitrogen retention occurring as a concomitant. Maintaining by means of dextrose-saline phleboclysis a liberal output of urine, from 800 to 1,000 cc. in the twenty-four hours, enables one to feel secure that hypochloridation will not occur.

KETOSIS

Even more important than isotonicity is the maintenance of a certain hydrogen ion concentration of the blood. Stating it in another way, next to water and sodium chloride, a certain concentration of sodium bicarbonate in the blood is of the greatest importance. As acidosis is an extremely common pathologic state, more common than fever, it should be always looked out for and prevented in every case of serious sickness. The simplest way of recognizing acidosis and at the same time of lessening it, is to administer, at short intervals, just enough sodium bicarbonate or other alkali to make the urine amphoteric. When this is accomplished it is known that acidosis cannot exist and also that the patient has not been harmed by the production of an alkalosis. One should, in other words, as a routine take care of a sufficiency of sodium bicarbonate as one ought to take care of a sufficient supply of water.

It will be found, however, that in all conditions in which dextrose is inadequately catabolized, whether this is in starvation or in diabetes, excessively large quantities of sodium bicarbonate would be required to secure this result and that even then the effect is merely temporary. One must in such cases proceed more fundamentally and relieve the cause of the acidosis by supplying dextrose, insulin or both. Indeed, one should not wait for the acidosis to assert itself. Whenever a patient cannot be given enough carbohydrate to prevent ketosis, one should provide it even before the condition asserts

4a. In conditions of extreme sweating, as in blast furnace work on a hot summer day, when the system loses a good deal of sodium chloride in the perspiration, the addition of from 0.1 to 0.25 per cent of sodium chloride to the drinking water is advised; but even under these conditions 0.85 per cent salt solution would be excessively salty.

5. Willems, J. D., and McNealy, R. W.: Dextrose Solution: Its Optimum Concentration for Therapeutic Administration, Northwest Med. **28**: 329 (July) 1929.

6. Haden, R. L., and Orr, T. G.: Effect of Inorganic Salts on Chemical Changes in Blood of Dog After Obstruction of Duodenum, J. Exper. Med. **39**: 321-330 (Feb.) 1924; Sodium Content of Blood of Dog After Experimental Intestinal Obstruction, ibid. **41**: 119-127 (Jan.) 1925; Experimental Obstruction of Jejunum: Effect of Sodium Chloride Introduced Directly into Lumen of Intestine Below Point of Obstruction, ibid. **41**: 707-718 (June) 1925.

7. Meyer-Bisch, R., and Günther, F.: Untersuchungen an der Brustganglymphe des Hundes, Arch. f. d. ges. Physiol. **209**: 92, 1925.

itself, for acidosis creates a vicious circle. Thus it has been shown by Thompson, Mitchell and Kolb[8] that artificially induced acidosis lessens carbohydrate tolerance, causing hyperglycemia. The younger the subject, the greater also the degree of metabolic activity; e. g., in hyperthyroidism or fever, the greater the tendency to ketosis, for which dextrose is the specific remedy. The quantity that can be given by hypodermoclysis is too small to be of any importance, as can be seen from the following figures: Assuming that 500 cc. of the 5 per cent solution is injected two or even four times daily, the 50 or 100 Gm. of sugar thus introduced would merely yield from 200 to 400 calories; but even this amount usually cannot be administered for more than two or three days, as the patient would then refuse further injections on account of the soreness produced in the tissues used repeatedly for this purpose. By intramuscular or, rather, epifascial injection, a 10 per cent dextrose solution can be injected into the muscles of the lateral and outer lateral surfaces of the thighs without a local untoward effect in quantities of 40 cc. for infants, and of 100 for children[9] and of 500 cc. for adults. Four such injections a day would yield an adult 200 Gm. of dextrose, or 800 calories, which might tide him over an emergency of a few days.

By dextrose phleboclysis, a 10 per cent solution can be introduced at the rate of 500 cc. an hour before the sugar tolerance of the average individual is overcome as evidenced by leakage of sugar into the urine. At this rate, more than 6,000 calories could be introduced in the course of twenty-four hours, which is twice as much as is required by the resting person. Hence it may be asserted that intravenous nutrition by means of dextrose phleboclysis is decidedly possible clinically, as is attested among others by Marriott[10] as well as by Porter, Morris and Meyer.[11] In view of this it should be inexcusable to permit a patient to develop starvation ketosis.

POISONING

It is of importance to distinguish between poisoning with diffusible and with nondiffusible bodies when "washing the blood" by means of phleboclysis is contemplated. While there is no doubt that, in certain conditions of poisoning, brilliant results can be achieved by flushing the system with fluid, there is also no doubt that there are toxemias that give no such response; in which, indeed, heroic attempts in this direction are harmful to the patients. Thus in tetanus, in diphtheria, in pneumonia and in other infectious diseases it is impossible to detoxicate the patient by pushing fluid through the system, because these disease toxins are more or less colloidal nondiffusible principles. In the case of diffusible poisons, on the other hand, phleboclysis should not be spared. Discrimination as to the kind of solution to use is also here in order. In mercuric chloride poisoning, for instance, dextrose phleboclysis is probably of decided value. Whether sodium chloride should be used in the infusion fluid or not depends on the degree to which sodium chloride has been lost by the system in vomiting and purging. In the presence of nephritis, one should certainly be sparing with the use of salt.

Especially important is dextrose phleboclysis as a part of a liberal carbohydrate administration program in conditions associated with a tendency to acidosis and fatty degeneration, particularly of the liver, as in phosphorus, chloroform and cinchophen poisoning. Indeed, on the basis of the evidence of the value of dextrose in experimental poisoning, it is advocated in the treatment of liver disease in general.[12]

Whether isotonic (5 per cent) or hypertonic (25 per cent) dextrose solution shall be used should depend on the following considerations: If there is a probability that unabsorbed poison still exists at the point of its application, hypertonic infusion would be contraindicated, as it increases absorption, and 5 per cent dextrose solution should be used. When, on the other hand, this danger does not exist and one wishes to draw deposited poison back into the circulation, the use of 25 per cent dextrose phleboclysis is advisable, most especially in the presence of heart weakness or of pulmonary edema.

Every drop of fluid that is introduced by phleboclysis must be disposed of by the system in some way. Hence a check on fluid income and output is imperative. Under normal circumstances, about 700 cc. of fluid is vaporized daily by lung and skin and about 300 cc. is lost in the feces. Hence approximately 1,000 cc. is taken care of by extrarenal elimination. This means that any quantity of fluid in excess of 1,000 cc. infused into the veins must reappear in the urine or be stored in the tissues in the form of edema, the initial stages of which may be clinically imperceptible even though harmful to the patient. Hence the total bulk of fluid infused daily should not exceed 1,000 cc. plus the quantity of urine. This would mean that, if the patient cannot pass more than 1,000 cc. of urine, not more than 2,000 cc. of fluid can safely be injected into the vein during the twenty-four hours, unless one of two conditions, or both, exist: 1. If there is profuse sweating, vomiting, diarrhea or exudation, such losses should be estimated and compensated for by increased quantity of fluid introduced. 2. When the system has lost much fluid, this loss is first made good before there is an increase in the quantity of urine. When, after an abundance of fluid has been given, the body weight becomes stationary and the urine diluted, it is clear that the tissues of the body are saturated.

When the system has difficulty in ridding itself of fluid, and dextrose is desirable for ketolytic or nutritional purposes, this is an indication for the use of concentrated, e. g., 25 per cent, dextrose solution. Otherwise the 10 per cent solution should be preferred, unless the chief indication is for the administration of water, when 5 per cent dextrose solution may be used.

The appearance of sugar in the urine, in the course of dextrose phleboclysis, means either cutting down on the introduction of the dextrose or the administration of insulin, excepting in cases of poisoning, in which the diuretic action of the sugar is welcome.

DEXTROSE OSMOTHERAPY

The intravenous injection of greatly hypertonic (25 to 50 per cent) dextrose solutions should not be undertaken without definite demand for osmotherapy; i. e., the osmotic changes produced thereby in the system. One exception to this has just been noted. Another one is in private bedside practice, in which a physician may find it more practical to infuse slowly 20 cc. of

8. Thompson, G.; Mitchell, D. M., and Kolb, L. C.: The Influence of Variations in Systemic Acid-Base Balance upon Carbohydrate Tolerance in Normal Subjects, Biochem. J. **27**: 1253, 1933.

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10. Marriott, W. M.: The Artificial Feeding of Athreptic Infants, J. A. M. A. **73**: 1173 (Oct. 10) 1919.

11. Porter, Langley; Morris, G. B., and Meyer, K. F.: Certain Nutritional Disorders Associated with a Putrefactive Intestinal Flora, Am. J. Dis. Child. **18**: 254 (Oct.) 1919.

12. Althausen, T. L.: Dextrose Therapy in Diseases of the Liver, J. A. M. A. **100**: 1166 (April 15) 1933. Elliott, C. A.: The Medical Management of Hepatic Disease, Illinois M. J. **64**: 560 (Dec.) 1933.

concentrated (25 per cent) dextrose solution by means of a syringe into a vein than to entrust drop phleboclysis to untrained attendants.

In general, hypertonic dextrose phleboclysis is indicated only when one desires to secure from it changes in the salt and water content of the body cells, as in many cases chill and fever, sometimes of considerable degree, with severe headache produced by these injections. Hypertonic injection is also liable to lead to occlusion of the vein used for the infusion.

The "colloidoclastic" crisis due to destruction of a certain percentage of corpuscles and possibly of other tissue elements may be of advantage as a form of nonspecific proteotherapy; e. g., to stimulate latent powers of antibacterial resistance. It shortens the bleeding time and has been advocated by Opitz [13] in internal hemorrhage. Löwy [14] found this of value only in some cases of bleeding from the bowel.

The first capillary territory affected by hypertonic infusion is that of the lungs. This is the reason for Stejskal's [15] report of favorable influence in pulmonary edema, whether of inflammatory or transudative nature, which has been confirmed by others. Litchfield,[16] John,[17] and Wells and Blankinship [18] report favorable results from the use of large quantities (from 250 to 500 cc.) of hypertonic (from 10 to 25 per cent) dextrose solutions in pneumonias.

Most marked seems to be the effect of osmotherapy in reducing intracranial pressure. Hypertonic salt solution has been used for this purpose, but Haden [19] advocates the use of dextrose rather than of salt solution in cases of meningitis and other conditions of increased intracranial pressure. He infuses 250 cc. of 25 per cent solution of dextrose (slowly in the course of one hour) every twelve hours, from the onset of the disease until there is no longer any evidence of excessive tension within the skull. In meningitis, these injections are given in addition to intrathecal injections of antiserum and combined with spinal fluid drainage. Its prompt use may save life in threatened cerebellar herniation into the foramen magnum.[20] In head injuries or after brain operations when slow pulse, low blood pressure and stertorous breathing indicate increased intracranial tension, hypertonic dextrose phleboclysis may be indicated, provided the emergency or other conditions preclude the giving of 30 cc. of saturated solution of magnesium sulphate by mouth, or twice the quantity by rectum. It may, of course, be employed in addition to these measures. One should not, however, permit the use of these solutions to lead to a false sense of security in acute cranial injuries to the detriment of the prompt use of indicated surgical measures.[21] It certainly should not be employed in the presence of intracranial hemorrhage.[22]

Hypertonic dextrose phleboclysis seems to have a special value in heart weakness with or without edema.[23] In the presence of edema, absorption of intercellular fluid would no doubt account for part of this action. Its alleged value in myocardial weakness without edema, in which it is considered a useful adjuvant to digitalis, may possibly be explained by its demonstrated vasodilator action, which lessens the work the heart must do. In addition to this, the dextrose may furnish nourishment to the exhausted heart.

PHLEBOCLYSIS IN THE ADMINISTRATION OF REMEDIES

One of the most important uses of drip phleboclysis promises to be the administration of other remedies in a slow and continuous manner. Enormous doses of antiserums, e. g., pneumococcus, tetanus, may thus be introduced, not only more easily but also more safely, because with extremely gradual administration there is no danger of anaphylactic shock.[24]

The very slow injection of epinephrine solution directly from the tubing of the apparatus may be of some value as an analeptic. Adding epinephrine directly to the drip reservoir when it is full of fluid produces too great a dilution to be of much value as a vasoconstrictor.

Insulin may be added to the infusion fluid in diabetic coma or if undesired glycosuria occurs. In diabetic coma, it may be employed initially at the ratio of 1 unit of insulin per gram of dextrose. As soon, however, as the extreme emergency is past, it is probably better to administer the insulin subcutaneously, as when it is given intravenously, because of rapid elimination in the urine, its potency is less than when it is injected hypodermically.

In hyperthyroid crises, in the presence of persistent vomiting, sodium iodide (2 Gm.) may be introduced in the course of dextrose phleboclysis.[25]

Phleboclysis furnishes an ideal method of administering for very sick patients, as in these absorption on oral, and even on hypodermic, administration is notoriously uncertain. Morphine relieves pain more promptly, paraldehyde quiets mania more quickly, caffeine may arouse a comatose patient more definitely, and strophanthin stimulate the heart more efficiently than when given in any other way. When speed is essential, the drug may be injected directly into the rubber tubing after disinfection of its surface with tincture of iodine. The dose should, in general, be half the oral dose.

CONCLUSIONS

1. In all very sick patients an adequate income of water, sodium chloride and dextrose should be taken care of as a routine procedure before rather than after a high degree of deficiency has occurred.

2. This, in cases in which adequate oral administration is impossible, can generally best be accomplished by dextrose phleboclysis, the composition of which should be determined by the individual indications present.

3. For combating hypohydration and for the relief of thirst, 5 per cent dextrose solution in distilled water seems preferable.

4. Whenever salt starvation is threatened or present, dextrose-saline phleboclysis should be practiced.

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19. Haden, R. L.: Therapeutic Application of the Alteration of Brain Volume, J. A. M. A. **73**: 983 (Sept. 27) 1919.
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5. Whenever carbohydrate cannot be ingested or digested to a sufficient degree, 10 per cent dextrose phleboclysis should be resorted to.

6. In poisoning with diffusible poisons, the diuretic and possible liver protective action of dextrose phleboclysis adds itself to the foregoing therapeutic values.

7. Concentrated (25 per cent) dextrose solution may be of value in certain internal hemorrhages, in inflammatory and exudative pulmonary edema, to lessen intracranial pressure (unless there is cerebral hemorrhage) and possibly in myocardial weakness.

8. During phleboclysis, other remedies may be conveniently infused; e. g., antiserums, epinephrine, insulin, iodide, sedatives and stimulants.

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STREPTOCOCCUS (VIRIDANS) MENINGITIS WITH RECOVERY

IMMUNOLOGIC STUDIES

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The streptococcus is not commonly involved in meningeal infections, but the disease, when once in progress, is highly fatal. Kolmer,[1] in fact, has set the mortality rate at nearly 100 per cent. However, instances of recovery from streptococcic meningitis have been reported. Comprehensive reviews of the literature on this subject have been made by Rosenberg and Nottley[2] and by Appelbaum.[3] The last named author was able to gather forty-six cases, including three of his own. Since his paper, eleven new cases have been added to the literature.[4]

A brief survey of the fifty-seven cases available for study shows the following facts: The onset usually followed an infection of the upper respiratory tract. The organisms that have been isolated include both the hemolytic and nonhemolytic types and Streptococcus viridans was definitely involved in only four instances. Trauma was directly responsible for the meningeal infection in four cases, and of these one showed a hemolytic streptococcus and another Streptococcus viridans. The therapy varied within wide limits.

From the Department of Laboratories and Medical Research, Bronx Hospital.

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2. Rosenberg, Lester, and Nottley, H. W.: Streptococcus (Partial Hemolyticus) Meningitis with Recovery, Ann. Int. Med. **4**: 1134 (March) 1931.
3. Appelbaum, Emanuel: Streptococcic Meningitis: Recovery in Three Cases, J. A. M. A. **98**: 1253 (April 9) 1932.
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Layton, T. B.: Recovery After Meningitis with Hemolytic Streptococci in the Cerebrospinal Fluid Under Direct Observation, Proc. Roy. Soc. Med. **25**: 488 (Feb.) 1932.
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Lewin, E.: Streptococcic Meningitis with Recovery: Report of a Case, Arch. Pediat. **49**: 632 (Sept.) 1932.
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Basset, A.; Ameline, A., and Mialaret, J.: Streptococcic Meningitis: Recovery After Cranial Fracture, Bull. et mém. Soc. nat. de chir. **59**: 295 (Feb. 25) 1933.
Canfield, N.: Streptococcus Meningitis: Report of a Case with Recovery, J. Michigan M. Soc. **32**: 108 (Feb.) 1933.
Rennie, J. K., and Craig, W. S.: Case of Streptococcic Meningitis with Recovery, Lancet **1**: 524 (March 11) 1933.
Canuyt, G.; Tassowatz, B., and Wild, C.: Méningite purulente septique à streptococcus hemolytiques d'origine orbitaire, Bull. Acad. de méd., Paris **109**: 370 (April 11) 1933.
Muller, M.: La question du delai dans les meningites aigues traumatiques, Echo méd. du nord **37**: 271 (June) 1933.

We are indebted to Dr. Sidney Cohn for the opportunity of studying the following case of Streptococcus viridans meningitis:

REPORT OF CASE

A man, aged 22, white, was struck on the right side of the head, Jan. 6, 1934. Examination revealed a deep laceration of the scalp, but roentgenographic study of the skull showed no fracture. The patient was somewhat drowsy and complained of headache. The fluid obtained by lumbar puncture was opalescent, but no organism was obtained from it by culture (Fordham Hospital). Six days after the injury the patient was admitted to the Bronx Hospital with symptoms of increasing drowsiness, headache and soreness of the neck. The latter was moderately rigid. The leukocyte count was 20,000 per cubic millimeter, with 89 per cent mature polymorphonuclear neutrophils. The urine contained some albumin. The following day 20 cc. of turbid spinal fluid was obtained which showed 5,000 cells per cubic millimeter, of which 96 per cent were polymorphonuclear cells. Sugar was present (16.6 mg. per hundred cubic centimeters) and the total protein was 0.43 per cent. Smears of the centrifugated sediment showed cocci and a gram-positive bacillus suggestive of the anaerobic group. For this reason the senior author advised the use of gas gangrene serum. Accordingly, 5 cc. of gas gangrene serum was administered intraspinally and the dose was repeated on the same day. The following day the patient appeared to be much improved. Further bacteriologic studies revealed Streptococcus viridans in pure culture in the fluid obtained by both taps. In view of the marked improvement, however, the gas gangrene serum was repeated in 5 cc. doses on each of two subsequent days. The patient made a rapid convalescence and left the hospital one week later. The temperature curve showed peaks of 104.6 F. January 12, the day of admission, 104.2 F. January 13, 101.4 F. January 14, with a gradual remission thereafter to 99 F. by January 17. The pulse curve showed a corresponding decline from 130 to between 80 and 90.

The rapid transformation from an almost moribund state to one of complete recovery was of no little interest. Since no really specific therapy was utilized in affecting the disappearance of the organisms, an investigation was undertaken to determine the possible rôle played by the gas gangrene serum in the patient's recovery. We thought that this serum, if of high opsonic power, would manifest its properties in the phagocytosis of the streptococcus by the numerous leukocytes present in the spinal fluid.

Immunologic Study

Tube	Organism 0.1 Cc. Blood Broth Culture 18 Hours Old	Serum, 0.5 Cc.	Cells, Cc.	Cells Showing Phagocytosis, per Cent	Growth on Culture
1	From spinal fluid	Patient	0.2	32	1 +++
2	From spinal fluid	Patient	0	..	0 +++
3	From spinal fluid	0	0.2	21	6 +++
4	From spinal fluid	Gas gangrene	0.2	56	1 +
5	From spinal fluid	Gas gangrene	0	..	5 ++
6	From spinal fluid	Normal human	0.2	27	3 ++++
7	From spinal fluid	Normal human	0	..	14 +++
8	From spinal fluid	0	0	..	22 ++++
9	From throat	Patient	0.2	29	0 0
10	From throat	Patient	0	..	0 ++
11	From throat	0	0.2	19	0 0
12	From throat	Gas gangrene	0.2	34	0 +
13	From throat	Gas gangrene	0	..	0 ++
14	From throat	Normal human	0.2	17	0 +
15	From throat	Normal human	0	..	1 +++
16	From throat	0	0	..	5 +++

With this in mind, the immunologic study outlined in the accompanying table was made.

The table summarizes the results of two trials. The materials used were obtained as follows:

(*a*) Patient's serum: Taken when signs of recovery were evident.

(*b*) Gas gangrene serum: A product of the Lederle Laboratories containing antibodies to the more common anaerobes; i. e., Clostridium perfringens, oedematiens, histolyticum and sordellii and Vibrion septique.

(*c*) Normal human serum.

(*d*) Streptococcus viridans, spinal fluid: Isolated from the first specimen of spinal fluid when the patient's condition was most critical.

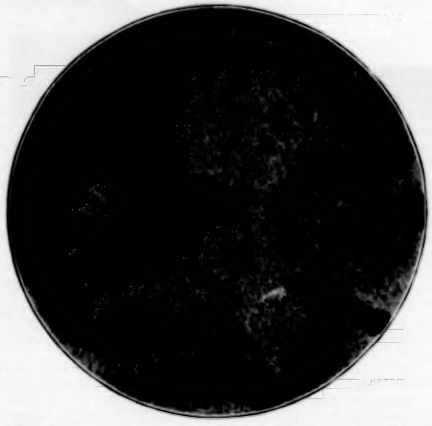

Fig. 1.—Smear from mixture in tube 4. The two macrophages are loaded with streptococci.

(*e*) Streptococcus viridans, throat: A throat culture from the patient yielded this organism in pure culture.

(*f*) Cells: Obtained by intrapleural injection of a normal rabbit. One pleural cavity received 10 cc. of a 10 per cent solution of calcium gluconate. Into the other cavity was injected 6 cc. of sterile broth plus 4 cc. of the rabbit's own blood. Within forty-eight hours, both cavities yielded a purulent exudate which consisted mainly of polymorphonuclear leukocytes and mononuclear cells. A mixture of the two exudates was used for the test.

The degree of phagocytosis was determined by staining smears from each tube with Wright's stain. The amount of growth was determined by streaking a loopful from each tube onto a blood plate. These cultures were made after two hours' and eighteen hours' incubation of the mixtures. The final reading represents an average of the two. In the column "growth on culture," the numbers refer to the number of colonies. The + sign was used in the second experiment because a heavier culture was tested and the colonies were too numerous to be counted; + + + + signifies a heavy growth, while + signifies that only a few scattered colonies were visible after forty-eight hours' incubation.

The results obtained confirm the hypothesis made previously, namely, the injected serum, by virtue of a property previously unknown, was distinctly inhibitive in its effect on the growth of these strains of Streptococcus viridans. We cannot postulate that the organism isolated from the throat was the same as the one found in the spinal fluid. The reactions of the two strains to the various serums were comparable, although the throat organism was more susceptible to phagocytosis. The mere presence of cells seemed sufficient to inhibit its growth (tube 11). In both cases the gas gangrene serum increased the degree of phagocytosis (tubes 4 and 12), as compared both with the patient's serum and with the normal serum control. With the organism, obtained from the spinal fluid, this increase was marked (tubes 1, 3 and 4).

If this "in vitro" test represents the reactions that took place within the spinal canal of the patient, it might be reasonably concluded that the fortuitous injection of the gas gangrene serum played a major rôle in the patient's recovery. The possibility of a spontaneous recovery, however, must also be borne in mind in view of Brieger's [5] work. This investigator was able to reproduce experimental streptococcic meningitis in dogs and monkeys. Of fourteen infected but untreated dogs, four recovered spontaneously. In monkeys, the proportion of spontaneous recovery was one out of three.

However, because of the sudden change in the patient's condition which followed the injection of the gas gangrene serum and the experimental data, we feel that the possible value of this therapy must be considered. On the other hand, we do not advocate the use of this serum as a specific for streptococcic meningitis. Other foreign serums might have acted similarly. The conclusions drawn from our study apply only to the case at hand.

The senior author saw, through the courtesy of Dr. A. Noah Schiller at the Jewish Memorial Hospital, another case of Streptococcus viridans meningitis which was secondary to the accidental puncture of the cribriform plate of the ethmoid during a nasal operation. The patient was treated with antimeningococcus serum until the organisms were identified by culture after which treatment was limited to repeated lumbar punctures. Recovery was complete in approximately three weeks.

Subsequent to the time this article was submitted for publication there was admitted to the Bronx Hospital,

Fig. 2.—Smear from mixture in tube 6. The streptococci are seen in the field but have not been phagocytosed. Normal human serum control.

April 10, a boy, aged 10 years, with typical meningitis of unknown etiology. Streptococcus haemolyticus was obtained from the spinal fluid on the day of admission and disappeared three days later, and the patient was discharged entirely well, April 20.

5. Brieger: Verhandl. d. deutsch. otol. Gesellsch., 21st meeting, Hanover, 1912, p. 77.

EMBOLISM OF THE PERIPHERAL ARTERIES

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Portis and Roth [1] recently reviewed the literature on embolectomy of the peripheral arteries and stated that only 131 cases had been reported. Four months earlier, however, Pearse [2] cited 296 cases which had been reported in the literature to July 1932.

All articles on this subject imply that the authors are in agreement with the commonly accepted opinion, that when gangrene results from the occlusion of large vessels, the resulting gangrene, without operation, is fatal.

Respect, however, has grown for the collateral circulation, especially in those portions of the body where end arteries have been said to exist. Case 1 is reported to demonstrate the fact that a fatal outcome is not always the result of a peripheral arterial embolism without embolectomy. This statement does not detract from the correctness of the conclusion of Key [3] and others [4] that in all threatening cases operation should be done. It merely offers hope for late inoperable cases and gives reason for the institution of general measures of palliative and sustaining treatment.

At the same time, the fact is recognized that the most recent authors [5] feel that the collateral circulation plays a very important part in the restoration of circulation, even after embolectomy. Also the admission is noted that over half of the patients (52 per cent) [2] subjected to embolectomy died within a month following operation. It is pointed out that death in these cases was due to a primary systemic disease or to embolism of vital structures such as occurred in case 2.

Case 1.—Mrs. S. B., aged 70, white, seen at home, March 8, 1933, was in a condition of moderate congestive failure with auricular fibrillation. The blood pressure was 200 systolic, 95 diastolic. She had been up and about doing housework until a few days before. She was given digitalis and confined to her bed. Four days later a normal rhythm appeared to be established, when suddenly severe pain developed in the lower part of the left leg. It was not definitely localized but was described chiefly as being in the anterior and lateral portions of the lower two thirds. Posteriorly it was a little higher, although it was not felt in the popliteal space. Examination revealed that the left foot was definitely colder to the touch than the right. No dorsalis pedis pulse was palpated in the left foot, while a good one was palpated in the right foot. No pulse was obtainable in the lower left leg. Vascular sounds were heard when the postero-internal aspect of the left thigh above the popliteal space was auscultated. A good popliteal pulse was felt and the sounds were heard in compression on the right side.

Fig. 1 (case 1).—The outlined area of scar corresponds to the extent of the preceding visible gangrene.

A diagnosis of popliteal embolism was made, and operation was recommended but refused. In a few days the pain was more definitely localized to the anterolateral aspect of the left leg and this area began to discolor. There was a recurrence of auricular fibrillation. The pain was intense and was relieved only by morphine.

By March 24 a typical gangrenous area was visible over the lower anterolateral aspect of the left leg and the whole calf was firm and tender. A heat cradle and alternate elevation and lowering of the leg brought indifferent results. There was no improvement in any of the vascular areas examined. Both legs continued to be moderately edematous. About the middle of April the pain was much diminished though still annoying, and the process seemed stationary, or even actually improved. Care had been exercised to provide sterile dressings over the gangrenous area to minimize infection and absorption of necrotic material.

Fig. 2 (case 1).—The arrow points to the contracted scarred area where the gangrene was maximal and corresponds to the widest area in figure 1.

April 28 an attack of acute pulmonary edema developed and the patient seemed to be moribund. However, she responded to morphine and atropine and a venesection of 425 cc. While she was quite weak for some time afterward, she gradually improved in every way. The superficial gangrenous area sloughed away and healing progressed slowly but continuously with only a few minor interruptions until the fall of 1933. At this time the last crust was removed and there was left only a shiny scarred area corresponding to the area indicated in figure 1. The edema had subsided greatly and the calf was soft and not tender. Figure 2 shows the appearance of the two legs on her seventy-first birthday, Jan. 26, 1934, less than a year after the onset. At the present time the color and temperature (to touch) are the same in the two legs. There is no discomfort and she gets about well enough without a crutch or cane to travel in an automobile. The auricular fibrillation has continued and there has been no return of either the popliteal or the dorsalis pedis pulse in the left leg. Her blood pressure at the time of the last picture was from 210 to 230 systolic and 90 diastolic.

Case 2.—Mrs. E. M., aged 71, white, admitted to the medical service of Dr. David Riesman at the Philadelphia General Hospital, July 4, 1933, suffering from moderate congestive failure, which had begun as a cough about three weeks previously and had gradually led to swelling of the ankles, dyspnea and palpitation.

Her general health had been good until three years before, when she began to notice a swelling of the neck. She became nervous and her eyes became prominent. She had some dysphagia and hoarseness.

The family history revealed several instances of hemiplegia and the fact that her mother had died of "galloping" consumption.

At physical examination she was acutely ill, with exophthalmos, which was more marked on the right side. The right pupil was smaller than the left and there was some lagging of the lid. There was shortness of breath, edema of the legs, cyanosis of the nails and distention of the vessels of the neck. A friction rub in the left side of the chest was thought to be due to pulmonary infarction. The heart was enlarged. There were no murmurs, but the rhythm was that of auricular fibrillation, confirmed by electrocardiography.

Three successful basal metabolic rate determinations were made: July 25 it was +33; August 16 it was +55, and August 31 it was +42.

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2. Pearse, H. E.: Embolectomy for Arterial Embolism of the Extremities (complete bibliography), Ann. Surg. **98**: 17 (July) 1933.
3. Key, Einar: Ein Fall Operierter Embolie der arteria femoralis, Wien. klin. Wchnschr. **26**: 936 (June 3) 1913.
4. Pearse,[2] Danzis, Max: Arterial Embolectomy, Ann. Surg. **98**: 249 (Aug.), 422 (Sept.) 1933.
5. Danzis, Max.[4]

Her general condition improved very much in spite of the fact that the auricular fibrillation continued. Operation was considered inadvisable at the time, and she was discharged with instructions to return in a month after a course of compound solution of iodine and digitalis in maintenance dosage.

The patient returned, November 25, in a worse condition than she had evidenced at the time of her previous admission. There was marked anasarca, auricular fibrillation and thyrotoxic symptoms. The basal metabolic rate determination was + 41.

The patient did fairly well on conservative treatment until October 10, when she seemed unusually pale and complained of severe pain in the left leg, which had begun earlier in the morning. She was seen by the intern and myself about 11 a. m. The whole left leg was colder to touch than was the right. It was slightly swollen and had a bluish hue. There was no dorsalis pedis or popliteal pulse. The only pulsation in the left leg was that of the common femoral artery, palpated for a distance of about 2½ inches below Poupart's ligament.

The patient was seen in consultation shortly afterward by Dr. Patrick McCarthy of the surgical staff, who concurred in the diagnosis of femoral embolism. He advised immediate operation which was done under local 2 per cent procaine hydrochloride anesthesia at 2:30 p. m.

An incision was made along the line of the left femoral artery. The vessel was exposed and its sheath incised. The location of the clot was visible and palpable at the bifurcation of the artery into the deep and superficial vessels.

An incision was made into the superficial femoral artery close to its origin and the obstruction was removed. It proved to be a "saddle" embolus involving both deep and superficial vessels. The vessel was closed and the wound was sutured without drainage.

There was some change in the color of the foot almost immediately, but there was some uncertainty as to whether the dorsalis pedis pulse could be palpated. However, the pulsation of the superficial femoral artery for a point some distance below its site of origin was good.

The next day the general condition was slightly improved and there was no evidence of gangrene. The auricular fibrillation continued.

The operative wound and the left leg improved steadily, but the patient's general condition was not good. Incontinence of urine and feces developed, October 13 and the patient was returned to the medical service, October 14, after removal of the sutures. There was good circulation in both legs.

When she returned to the medical ward, it was noted that the right side of the face was flattened and she appeared to have had a small cerebral vascular disturbance. Part of her drowsiness was evidently due to sedatives of the barbiturate group.

The general condition improved, though she continued to be incontinent. October 23, she was able to sit up, take medicine and answer questions intelligently. She had a good appetite. The patient maintained a fairly satisfactory condition, with occasional periods of mental confusion until November 7, when she became a little unruly and quite garrulous. She tried to get out of bed.

Death occurred suddenly, November 15, at 9:20 a. m., without apparent pain or struggle. There was no autopsy.

SUMMARY

In two cases of peripheral arterial occlusion in elderly white women of similar ages, auricular fibrillation was present. In the first case the popliteal artery was occluded. A condition of gangrene resulted in the affected area. Termination of the gangrenous process and healing ensued. The patient is alive nearly a year later.

In the second case, complicated by thyrotoxic symptoms, the femoral artery was occluded. An embolectomy was done. The patient died nearly six weeks later after complete healing of the operative wound and restoration of circulation in the affected limb.

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MORQUIO'S DISEASE

REPORT OF TWO CASES

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In 1929, Morquio[1] of Montevideo reported a peculiar form of familial osseous dystrophy, occurring in four children of five in the same family. He was unable to find similar cases in the literature available to him.

Morquio stated that the children were apparently healthy and had developed normally during the first year. At the time that they began to walk, bony changes appeared, "sparing only the head and face and causing no pain or other suffering but functional troubles affecting especially motility and physical

Fig. 1.—Appearance of patients at ages of 6 and 9, showing scaphocephalic skulls, square chests and pot bellies. Note umbilical hernia in older boy.

trouble destroying the harmony of the body." He noted that the deformities were symmetrical, that the extremities were of normal length, though deformed, and that the thorax "was reduced in length and broadened." The results of a roentgen examination in each reported case of this peculiar form of dwarfism have been as characteristic as those described by Morquio. There has been demonstrated "osseous exuberance, for instance, in the vertebral column, the epiphyses of the elbows, the shoulders and the knees, or absence of ossification, for instance, in the wrists."

Since the publication of the description of the disease by Morquio there have appeared reports of the same condition by other authors.[2] None of the later

1. Morquio, L.: Sur une forme de dystrophie osseuse familiale, Bull. Soc. de pédiat. de Paris **27**:145 (Feb.) 1929.
2. Ruggles, H. E.: Am. J. Roentgenol. **25**:91 (Jan.) 1931. Meyer, H. F., and Brennemann, Joseph: Rare Osseous Dystrophy (Morquio), Am. J. Dis. Child. **43**:123 (Jan.) 1932. Barnett, E. J.: Morquio's Disease: Presentation of Two Cases, J. Pediat. **2**:651 (June) 1933.

writers have described marked osseous changes in the skull or any eye disturbances, nor have they substantiated the presence of a low blood calcium, which was noted by Morquio. Although various glands have been mentioned, none of the authors have described the condition of the thymus gland.

As we have studies on the blood calcium, made three and one-half years apart, roentgenograms of the skulls

Fig. 2.—Scaphocephalic skull, showing diastasis of coronal suture, fused lambdoid sutures, flattening of base, and imperfectly developed anterior wall of sella.

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REPORT OF CASES

Two brothers, R. C., aged 6 years, and K. C., aged 9 years, at the time of the original examination, Aug. 15, 1930, were sent into the clinic with a diagnosis of cretinism. The father, aged 44, was living and well. The mother had died in 1925 following a pelvic operation. The oldest child, a girl, aged 14 years, died in 1915. Cretinism was given as the cause of death. Those who had seen her stated that her appearance was similar to that of the patients. A second daughter, aged 23 years, was feebleminded and was in an institution at the time the history was taken. The father stated that the mental disturbance had followed an attack of scarlet fever at the age of 8 years. A third daughter, aged 15 years, was normal except for the fact that she was slightly overweight.

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Nothing was done for the children, although the deformities increased, until 1929, when they were seen by a physician who made a diagnosis of cretinism and placed them both on thyroid medication for three months. No improvement of their condition resulted.

In February 1930 they had been examined by the department of pediatrics at the University of Michigan.[3] The results of examination of the two brothers were essentially similar; for this reason only the results of the physical examination of R. C. will be given:

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The blood chemistry of R. C. showed: serum calcium, 11.2 mg. (normal, from 9 to 11 mg. per hundred cubic centimeters); inorganic phosphorus, 3.9 mg. (normal, 3.7 mg. per hundred cubic centimeters), and the fasting blood sugar was 85 mg. (normal, from 90 to 120 mg. per hundred cubic centimeters). The blood chemistry of K. C. showed: serum calcium, 11.4 mg.; inorganic phosphorus, 3.8 mg., and sugar, 81 mg. A dextrose tolerance test was performed on each patient and gave essentially normal results.

A diagnosis of bilateral buphthalmos was made on each of the patients, February 11, by the department of ophthalmology, and a bilateral iridectomy was advised for each. This operation was performed on K. C., March 25.

Fig. 3.—Lateral view of spine in January 1934, showing lack of normal curvatures, irregular vertebral bodies and some areas of exuberance, as in August 1930.

Roentgen studies of the hands, wrists, knees and elbows in both patients showed delayed epiphyseal development and distortion of the shaft of the phalanges, metacarpals and metaphyseal ends of the bones of the arm and forearm. The phalanges were thickened and their trabeculae were irregular and distorted. There were irregular areas of decreased density near the metaphyses. A flat projection of the skull showed a large cranial vault with a thin wall showing no increase in

3. Cowie, D. M.: Personal communication to the author, with permission to use the observations made by the Department of Pediatrics, University of Michigan.

digital markings. The anterior wall of the sella was imperfectly developed. The bridge of the nose was sunken.

The description of one child is the same as that of the other, and therefore we shall record our notes only on the older child, K. C. The head, which seemed almost to sit on the shoulders, owing to the short neck, was scaphocephalic. Because of the shape of the head, the bridge of the nose appeared to sit back in the face and the lower part of the nose at the nares appeared to be broad and somewhat flattened. The jaw bone was larger than normal and out of proportion to the skull. Figure 1 shows the squareness of the chest, which was due to an increase in the anteroposterior diameter. He had a pot belly and an umbilical hernia, which protruded 2.5 cm. The younger child had no hernia.

Fig. 4.—Appearance of patients in January 1934. Both boys are trying to extend the arms and the fingers.

In a relaxed standing position (fig. 1), the backward position of the hips and the forward bend of the thighs was readily noted. The latter was due to the lack of ability to extend the legs on the thighs completely. In fact, he could not completely extend the extremities at any of the joints, including the fingers. The fingers could not be completely flexed.

Nothing abnormal was noted about the thyroid, the lymphatic glands or the testes. There was no roentgenographic evidence of enlargement of the thymus. The heart and lungs were normal.

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The roentgenologic studies were made by Dr. T. O. Menees, and mention will be made of only those changes which are additions to the observations made by the University of Michigan. Films of each head showed an unusually large cranium, with a thinning of the bones in the skull cap and dilated diploic channels. The sagittal and lamdoid sutures were fused (fig. 2). There was a diastasis of the coronal suture in the younger boy. The spine was straight, showing a lack of normal curvatures, and it presented areas of exuberance (fig. 3).

Because of the completely negative neurologic examinations and the presence of increased intracranial pressure, it was decided to make an encephalogram on the older boy. This showed symmetrically enlarge lateral ventricles, with a slightly enlarged third ventricle, and a patchy distribution of air over the cortex.

The patients were seen again in January 1934. Little change had taken place in the deformities (figs. 4 and 5). The blindness had increased in both boys, but especially in the older, who was barely able to distinguish light and dark objects. The optic disks in each case were extremely white, and there was an almost complete loss of all fine vessels. Nothing abnormal was noted about the skin, hair, nails or teeth. No changes had appeared in the thyroid, testes or thymus (the latter checked by roentgen examination). The liver and spleen could not be palpated. The blood calcium was 8.6 mg. in the case of K. C., and 9.7 mg. in that of R. C.

The measurements for K. C., at the age of 13 years and R. C. at the age of 9 years are given in the accompanying table.

The results of the roentgen examinations were the same as those of 1930, except that in each case the skull showed an increase in the scaphocephalic deformity, and in the younger boy a ridge could be palpated along the line of the sagittal suture.

The hands showed the same osseous deformities that were noted first at the University of Michigan in February 1930. The carpal bones presented the same changes (fig. 6) as noted by Ruggles when he stated that "ossification begins in the distal row of carpal bones and they are always small and irregular in outline."

COMMENT

The history and physical examination of the one boy is virtually that of the other. The changes that have taken place over a period of three and one-half years are well illustrated in the illustrations, particularly figures 1, 4 and 5.

A review of the literature has convinced us that our cases are identical with those reported under the name of Morquio's disease. In all reported cases of this type of osseous dystrophy there is a complete agreement as to the appearance of the body, but not as to the face and head. Morquio stated that the face and head were not involved; Meyer and Brennemann noted that the head was large; Ruggles stated that the head was large, "eyes wide spaced and the root of nose depressed"; Barnett made the same statement as Ruggles. No observer has noted any abnormalities on roentgen examination of the calvarium. Our patients showed not only the large head, wide spacing of the eyes and the depressed bridge of the nose but, in addition, definite skull changes on roentgenologic examination.

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while the second child, also a girl, although physically normal, was an imbecile.

Some effort has been made to determine whether blood chemistry changes may act as a causal factor in production of the disease. Morquio is the only writer who has observed marked abnormality in the blood chemistry. He believed that the profound disturbance of osteogensis could be explained by the low calcium content of the blood (4 and 5 mg., respectively, in the cases he studied). His theory has not been substantiated by the observations of Meyer and Brennemann, Ruggles or ourselves. The first readings in our cases, which were 11.2 mg. for R. C. and 11.4 mg. for K. C. in 1930, and the later ones of 9.7 mg. for R. C. and 8.6 mg. for K. C. in 1934 can be considered as normal.

Measurements of the Two Patients

		Approximate Normal (Holt)
Measurements for K. C. at the age of 13 years		
Circumference of the head	22 7/8 inches	21 inches
Standing height	47 1/2 inches	58 9/10 inches
Circumference of the chest	23 3/4 inches	27 7/10 inches
Weight	62 9/10 pounds	88 9/10 pounds
Measurements for R. C. at the age of 9 years		
Circumference of the head	22 inches	20 9/10 inches
Standing height	45 inches	50 1/10 inches
Circumference of the chest	22 7/8 inches	25 1/10 inches
Weight	49 pounds	60 pounds

Fig. 6.—Right hand of older boy in January 1934 with no new centers of ossification since August 1930.

We agree with Meyer and Brennemann when they state that, though this condition has some of the characteristics of achondroplasia, there are certain changes that cannot be explained entirely on this basis. There are, as Morquio has said, "Rarefactions, deformations, destructions, delays and absences." These changes affect the entire skeleton and are not limited chiefly to the epiphyses of the large and small bones of the extremities, as he stated. Other than achondroplasia, we know of no osseous dystrophy which this condition even resembles.

SUMMARY

1. So far as we are able to learn, the two cases of Morquio's disease, or generalized osseous dystrophy here described, are the only reported cases presenting extensive changes of the skull, which resulted in brain disturbance and optic atrophy.

2. No abnormality in the blood calcium was noted in either case in two observations made three and one-half years apart.

3. We believe that in this condition the osseous dystrophy is generalized, and the process not confined to the extremities, as in achondroplasia.

626 Medical Arts Building.

A RATIONAL, NONSURGICAL TREATMENT FOR INTESTINAL FISTULAS

REPORT OF A CASE

FRANK R. GUIDO, M.D.
VISALIA, CALIF.

The presence of an intestinal fistula, especially of the small intestine, whether it occurs spontaneously or is made surgically for the purpose of draining the bowel, is a most unwelcome condition and a trying ordeal for the patient and is frequently dangerous to life itself. To the surgeon it is frequently a most baffling complication to contend with, not only because of the difficulty to obtain a spontaneous closure but also because of the detrimental effects it has on the patient's organism as a whole as a result of the loss of the essential intestinal juices which, if not reabsorbed, cause marked changes in the body chemistry.

Much has been written in recent years concerning the toxemia of fistulas of the upper intestinal tract. Walters and Bollmann [1] have shown that the toxemia of acute duodenal fistula is due to the loss of pancreatic juice and the acid and chloride of the gastric juice through the fistulous opening. This toxemia is similar to that which occurs in high intestinal obstruction and is associated with a high concentration of blood urea, a decrease in blood chlorides and an alkalosis. The amount of fluid lost in these high fistulas is considerable and results in marked symptoms of dehydration.

Experimentally it can be shown that animals with an isolated loop of duodenum draining its contents to the outside die in from seven to eight days, although the continuity of the gastro-intestinal tract is restored by means of an anastomosis. In such cases blood studies reveal practically a normal chloride content but an enormous increase in blood urea. The importance of the reabsorption of intestinal juices was clearly shown by Wilkie in a case of obstruction in which an enterostomy was performed above the obstruction. Although this completely relieved the obstruction, the patient gradually grew worse until another enterostomy was made below the obstruction and the intestinal juices, which were being lost from the upper fistula, were reverted by means of a connecting tube into the lower fistula. The condition of the patient immediately improved.

Pancreatic juice is a powerful digestant of tissue and when it comes in contact with the tissues of the abdominal wall causes a marked destruction and irritation of the skin and underlying tissue, with large crater formation. It is therefore clear, from both clinical and experimental observation, that the leak from intestinal fistulas must be controlled and stopped for two reasons: (1) to prevent the loss of intestinal juices which are so essential to the body, and (2) to prevent the digestion of the abdominal wall, with the resultant slough and infection.

Fistulas of the upper intestinal tract are not infrequent and may occur as a result of operative procedures on the stomach or duodenum or spontaneously from a ruptured gastric or duodenal ulcer. The making of an enterostomy of either the small or large intestine is often a life-saving procedure and is a simple method

1. Walters, Waltman, and Bollmann, L.: The Toxemia of Duodenal Fistula, J. A. M. A. 89: 1847-1853 (Nov. 26) 1927.

of decompressing a distended bowel. It is frequently performed as a preliminary to a more extensive operative procedure or in cases of acute mechanical obstruction, when, owing to the serious condition of the patient, a rapid and simple opening of the ileum or jejunum will often save a life.

It is my purpose in this paper not to dwell on the indication for jejunostomy or ileostomy, as they are well understood, but to emphasize a form of nonoperative therapy to be used in closing up these fistulas, which is simple, physiologically rational and attended with excellent results. It is well known that the operative attempt at the closure of such fistulas frequently results in failure and, owing to the presence of infection and loss of abdominal wall tissue, is fraught with much danger to the patient. Only rarely do these fistulas close spontaneously. In speaking of duodenal fistulas, Pannett [2] stated that they never heal spontaneously and if not closed prove fatal.

Any method of closure that is without risk to the patient and that is successful in a high percentage of cases will be welcome to the surgeon and to the desperately ill patient. The severity of intestinal fistulas varies directly as their distance from the pylorus—the closer to the pylorus, the more marked the toxemia and digestion of the abdominal wall. Although fistulas low down in the ileum produce very little toxemia, marked digestion of the abdominal wall occurs. Fistulas of the large bowel produce no toxemia and little or no abdominal wall digestion.

Potter [3] of St. Joseph, Mo., was the first to make use of a physiochemical method to close these fistulas. He used tenth normal solution of hydrochloric acid to neutralize the alkalinity of the pancreatic juice, thus preventing tryptic activity, which is the active destructive and digesting agent in these cases. Tenth normal hydrochloric acid is the percentage of hydrochloric acid that is normally present in the gastric juice and therefore should be the ideal strength to use. Together with the acid, Potter also employed sterile beef extract and olive oil, which would act as a pabulum for the excess of pancreatic juice and bile that was not neutralized by the hydrochloric acid. At that time Potter reported one case of duodenal fistula which occurred following operation on a perforated duodenal ulcer and which was unsuccessfully treated by surgery. Within a few weeks after the use of the hydrochloric acid treatment the fistula was entirely closed and the wound healed. In 1929 Potter [4] reported eight more cases of duodenal and intestinal fistulas, which were quickly healed by the use of the hydrochloric acid treatment.

FORMER METHODS OF TREATMENT

Operative intervention is usually attempted to close these fistulas and it is readily seen that their success is most limited. In fistulas close to the pylorus the general condition of the patient is usually precarious, the tissues are most friable, infection is present and accurate surgical closure is most difficult to obtain and frequently results in the reforming of the fistula. Also, patients frequently die of toxemia, exhaustion, emaciation or dehydration before an attempt at surgical closure can be made. In the treatment of duodenal fistula, Cameron [5] used a continuous suction apparatus in an effort to prevent the digestive juices from coming in contact with the tissues of the abdominal wall. Although theoretically this is a logical method of attack, nevertheless practically many difficulties are encountered, and it is most difficult to keep the wound dry and free from the digestive fluids. Constant attendance is required at all times. Co-Tui,[6] in an experimental study on dogs, used kaolin powder around the mouth of the fistula in order to remove the enzyme trypsin. The powder must be changed as soon as it becomes saturated, the number of changes depending on the amount of discharge. I am not familiar with this method of treatment.

PROPOSED METHOD OF TREATMENT

This is the method suggested by Potter and consists of the application of tenth normal hydrochloric acid. The hydrochloric acid solution is used as a wet dressing around the wound and a plug of gauze saturated with the acid solution is put into the crater of the fistula. No petrolatum or other ointment is used around the wound. The dressings are changed as often as they become saturated, and it is most important to have an excess of acid present to neutralize the alkalinity of the wound discharge completely. In a high fistula the dressings must be changed frequently because of the high alkalinity and large amount of the discharge and because the discharge is so liquid. At the time of each dressing the fluid in the crater of the wound is gently aspirated, thus keeping it as dry as possible at all times. In order to render the fecal content more solid, the patient is placed on a constipating diet, from 4 to 6 ounces (120 to 180 cc.) of boiled skim milk being given every few hours. Opium may be given in the form of either the tincture or the powder. The amount of other fluids by mouth is limited to 1,000 cc. a day. The solidification of the fecal content considerably lessens the irritation. In the case of a duodenal fistula, the intestinal discharge is water-like, and it is impossible to solidify it by any known means. Together with the hydrochloric acid Potter used sterile beef broth, which acts as a pabulum for the trypsin. However, in fistulas of the lower part of the ileum it is possible to control tryptic activity with the use of hydrochloric acid alone, as I was able to do in the case here reported. When tryptic activity is most pronounced, as in the upper part of the intestine, it may be necessary to include the sterile beef broth with the hydrochloric acid, since the pancreatic juice is present in such large quantities that complete neutralization with hydrochloric acid alone is difficult to secure.

REPORT OF CASE

The following is a report of a fistula of the ileum made surgically for the purpose of relieving tension and draining the bowel in a case of paralytic ileus following appendectomy:

A. H., a man, aged 57, with a negative family history, seen by me on the morning of Sept. 16, 1933, stated that he had never had a serious illness, although he had been having some backache on the right side for the past year, which he attributed to an injury of the back. He had also suffered a number of mild attacks of abdominal pain, which would last

2. Pannett, C. A.: Contribution to the Treatment of Duodenal Fistula, Lancet **1**: 1109 (April 18) 1914.
3. Potter, Caryl: The Treatment of Duodenal Fistula: Report of a Case, J. A. M. A. **88**: 899-901 (March 19) 1927.
4. Potter, Caryl: Treatment of Duodenal and Fecal Fistula, J. A. M. A. **92**: 359-363 (Feb. 2) 1929.
5. Cameron, A. L.: The Treatment of Duodenal Fistula, Surg., Gynec. & Obst. **37**: 599 (Nov.) 1923.
6. Co-Tui, F. W.: Excoriations Around External Gastro-Intestinal Fistulae: Experimental Studies on Their Etiology and Further Experience with the Kaolin Powder Treatment, Ann. Surg. **98**: 161-320 (Aug.) 1933.

only a few hours and for which he did not seek any medical attention. The present attack began ten hours before with severe cramplike pain in the abdomen. The temperature was 100 F., the pulse 90 per minute, the respiration rate 16 per minute.

General physical examination was negative except for the abdomen, which showed marked tenderness over the entire right lower quadrant and right lumbar region. There was severe pain on any attempt to extend the right thigh at the hip. Laboratory examination showed 16,500 white blood cells per cubic millimeter, with 85 per cent neutrophils. The urine was normal. A diagnosis of acute appendicitis was made and immediate operation was decided on.

Under spinal anesthesia the abdomen was opened through a McBurney incision. A small amount of free seropurulent fluid was present in the peritoneal cavity. The appendix was perforated at the distal end and a small fecalith was free in the peritoneal cavity. The cecum and appendix were firmly bound down to the posterior parietal peritoneum, and there was extensive gangrene of the mesenteriolum. Appendectomy was performed in the usual manner and a cigaret drain was placed at the base of the cecum. The abdomen was closed in the usual manner.

At the time of operation it was noted that the small intestine was somewhat dilated. Although nothing was given by mouth and fluids were given intravenously, distention gradually increased. There was no evidence of any peristalsis, and signs of paralytic ileus became more marked. The usual palliative measures were of no avail and on the fourth postoperative day an ileostomy was performed under local infiltration anesthesia. A left muscle-splitting incision was used and a catheter was sewed into a loop of ileum with the Witzel method. There was immediate evacuation of much foul and toxic material through the ileostomy opening. Within two days gas began to pass both by rectum and through the ileostomy tube, and feeding of dextrose and sodium chloride was started through the tube. The general condition of the patient gradually improved and the enterostomy tube was removed on the seventh day. Within three weeks the appendectomy wound, which had had a considerable amount of fecal drainage, was entirely closed; but as bowel tonus increased the thin, watery fecal drainage from the enterostomy wound became so profuse that dressings had to be changed every two hours. The skin became raw and irritated and a large crater formed, which showed no signs of healing. The discharge was strongly alkaline.

October 22, about four and one-half weeks after the original ileostomy was performed, the Potter method of treatment for closure of the fistula was started. Gauze soaked with tenth normal hydrochloric acid was applied to the wound in the form of wet dressings, and a plug of gauze was inserted into the crater. Dressings were changed as often as they became saturated with bowel secretion. Boiled skim milk and tincture of opium were given in an attempt to harden the fecal contents. November 5, i. e., fifteen days after the beginning of treatment with hydrochloric acid, the fistula was entirely closed and the wound all healed.

COMMENT

In this case, within a period of about two weeks it was possible to close a fistula of the ileum, which was discharging very alkaline irritating fecal matter, by the use of wet dressings of tenth normal hydrochloric acid. The fistula showed no signs of closing spontaneously; in fact, the digestion of the abdominal wall was becoming more pronounced every day. The method is based on physiologic principles, is without danger to the patient and is highly successful. The method should be given a fair trial in all cases of intestinal fistula before any attempt at operative intervention.

CONCLUSIONS

1. The persistence of intestinal fistulas is due to the proteolytic action of trypsin.

2. Upper intestinal fistulas heal spontaneously only on very rare occasions.

3. High intestinal fistulas, per se, result in marked changes in the blood chemistry due to fluid losses and chloride depletion.

4. The use of dressings soaked in tenth normal hydrochloric acid will neutralize the alkalinity of the intestinal juices and thus inhibit tryptic activity, resulting in closure of the fistula.

5. The risk and poor results of operative intervention is eliminated by the use of tenth normal hydrochloric acid.

6. The Potter method of treatment of intestinal fistulas is based on physiologic principles; it is without danger and should be tried in all cases.

510 Bank of America Building.

Clinical Notes, Suggestions and New Instruments

ONYCHIA DUE TO CHRONIC HYPOVITAMINOSIS

CLEVELAND WHITE, M.D., CHICAGO

Clinical pictures of unmistakable signs and symptoms due to hypovitaminosis or avitaminosis are well known. In a recent editorial[1] of THE JOURNAL are emphasized the remarks of McLester[2] that chronic vitamin deficiency may produce vague borderline or subclinical disorders. While many syndromes are being attributed to lack of vitamins at the present time, seven cases of definite nail deformities have been observed in the past two years which are believed to have been due to chronic hypovitaminosis, especially B_2 and D.

CLINICAL MANIFESTATIONS

The earliest manifestations are irregular, longitudinal ridging with short transverse, semipunctate depressions. This was first observed in a woman, aged 38, who had restricted her diet too severely in controlling the symptoms of another disease. The six other patients were all women who had dieted for several years because of a marked tendency to become obese. Ages ranged from 35 to 50. All had abstained from butter and all "fattening" foods. The most pronounced case showed marked dystrophy of the terminal portion of the nail plates. All gradations of nail changes occurred between these two types. All nails were involved and there were no subjective symptoms. There were no other dermatologic changes. Two showed lowered metabolic rates of —20 and —14, but administration of thyroid extract by mouth did not effect any improvement in the nails, whereas giving foods and medicaments containing vitamins B_2 and D did. The nails had shown changes for about six months to six years.

DIFFERENTIAL DIAGNOSIS

In the more pronounced cases, onychomycosis (ringworm of the nails) and psoriasis must be ruled out. In a series of seventy-four cases of onychomycosis, the absolute diagnosis can be made only with the finding of fungi either microscopically or culturally, because the clinical picture varies from a mild scaly nail thickening to almost total destruction of nails with a remaining powdery residue. Psoriasis of the nails can occur alone but is usually associated with typical cutaneous changes of that disorder. The nail manifestations of psoriasis are being discussed in another paper.[3]

Result of studies and research under therapeutic grant 143 of American Medical Association.

Part of the Scientific Exhibit on Diseases of Nails at the Eighty-Fourth Annual Session of the American Medical Association, Milwaukee, June 12-16, 1933.

From the Departments of Dermatology of Northwestern University School of Medicine; Passavant, Norwegian-American and West Suburban hospitals, and the Illinois Eye and Ear Infirmary.

1. Dermal Manifestations of Vitamin A Deficiency, editorial, J. A. M. A. 102:770 (March 10) 1934.

2. McLester, J. S.: Nutrition and Diet in Health and Disease, ed. 2, Philadelphia, W. B. Saunders Company, 1931.

3. White, Cleveland: Diseases of the Nails, with Especial Reference to Ringworm and Psoriasis, to be published.

COMMENT

That vitamin deficiency can produce dermatologic syndromes is well illustrated in a recent paper by Loewenthal.[4] He noted a papulofollicular dermatosis associated with dryness of the skin. Hutter and Middleton[5] have noted the tongue changes in a number of cases due to vitamin B deficiency. Nail changes have been noted in the various anemias by many writers, and numerous causes have been mentioned in such cases.

No animal experimental work confirms these clinical impressions, and Steenbock[6] states that he has not regularly noted such nail changes in his animal studies. No nails were removed for histologic study, as patients would not permit it.

The treatment consisted of large doses of haliver oil with viosterol and foods containing vitamins B_2 and D. The nails of six patients became essentially normal, while the seventh is vastly improved. The last patient had had nail changes for six years and the nails had become disintegrated, showing only about one eighth of normal nail present when first observed. Six had had local therapy in other hands with no improvement.

SUMMARY

Nail changes varying from slight transverse depressions with longitudinal ridging to marked dystrophy were noted in seven patients.

Deficiency of vitamins B_2 and D due to restricted diet was believed to be the etiologic factor.

All the nails have responded either by a cure or by marked improvement to the administration of these vitamins or foods containing these vitamins.

122 South Michigan Avenue.

MASSIVE SKIN GANGRENE COMPLICATING CHICKENPOX

T. M. WATSON, M.D., GREENVILLE, N. C.

This case is reported because massive gangrene of the skin is an unusual complication of chickenpox.

REPORT OF CASE

H. C. Jr., a schoolboy, aged 6 years, had had a normal birth and infancy. He had never had any severe illness. There had been frequent colds before the tonsils and adenoids had been removed two years before. Since that time he had been perfectly well except for a mild case of measles four months previously. He was doing well in school.

There was an epidemic of chickenpox in the schools at the time of the onset of illness. Five days before he entered the hospital a low grade fever developed and the boy complained of pains in the joints. Two days later vesicles characteristic of chickenpox appeared on the skin. There were few of them and all indications pointed to a mild attack. On the fourth day of the illness the patient became very restless; the temperature went to 104 F., the pulse to 180, and the boy had a convulsion. Examination at this time showed no evidence of infection except the chickenpox lesions on the skin and an elevated tumor surrounding a small lesion on the skin. This was in the right axillary line at the level of the ninth rib. It was one-half inch (1.27 cm.) in diameter and was indurated and tender. There was no discoloration of the skin.

The white blood cell count was 16,000 with polymorphonuclears, 62 per cent; small lymphocytes, 34 per cent; eosinophils, 2 per cent; transitionals, 2 per cent. The urine was normal except for a fairly heavy trace of albumin. The Wassermann reaction was negative. The tuberculin test was negative. The spinal fluid, the bleeding time and the coagulation time were normal.

Four hours after examination the skin over the tumor became discolored, apparently from intracutaneous hemorrhage, and twelve hours later a section of skin an inch (2.5 cm.) in diameter, over and surrounding the tumor, became gangrenous and showed that it was going to slough. For an inch around the sloughing area the skin showed ecchymosis. The intracutaneous hemorrhage, followed in a few hours by gangrene, spread so rapidly that at the end of twenty-four hours the gangrenous area was 6 inches (15 cm.) wide and extended from just below the axilla to the crest of the ilium. The patient was profoundly toxic, nauseated and delirious, and the temperature ranged from 104 to 107 F. The skin was dry, the eyes were sunken, and the expression was pinched.

The fifth day after the onset, he was taken to the hospital. One thousand cubic centimeters of Hartman's solution[1] was given intraperitoneally and 400 cc. of 10 per cent solution of dextrose intravenously. This did not improve the general condition much. The symptoms of toxemia continued, and the gangrene, preceded by intracutaneous hemorrhage, continued to spread.

Eight hours after admission to the hospital a transfusion of 500 cc. of blood was given. The effect of the blood was rapid and marked. The symptoms of shock cleared promptly. After three hours the temperature was 102 F., and the pulse rate had come down from 180 to 120 per minute. The patient was quiet and rational. The vomiting was checked and he began taking and retaining fluids. It was most noticeable that neither the hemorrhage in the skin nor the gangrene advanced any further after the blood was given.

For two days after the transfusion, progress was satisfactory; then there was a return of the toxic symptoms, with a temperature of 104 and a pulse of 170. There was rigidity of the neck and the Kernig sign was positive. Anhydremia

Skin lesion thirty days after onset, showing first patch of grafts.

was evident, in spite of the fact that the patient was getting a fair amount of fluid by mouth and was getting from 1,500 to 2,000 cc. parenterally each day. There was no extension of the skin lesion. The slough had broken loose from the surrounding skin and left a punched out border, and the surrounding skin was undermined for about half an inch. The dead skin was contracting toward the center and there was an enormous exudation of yellowish fluid from the raw surface. Examination of the chest revealed bronchopneumonia in the lower lobe of the right lung.

A second transfusion was given from another donor. Improvement was not so marked as was the case after the first transfusion, but the general condition improved somewhat. The signs of meningeal irritation cleared after eight hours and there was much less fluid loss from the skin lesion. For ten days after the second flare up the course was that of a severe bronchopneumonia; then the lung signs and the fever gradually cleared. The temperature reached normal on the eleventh day after the second transfusion was given. For two weeks the patient did not lose ground, but he made very little progress. His appetite was poor and great difficulty was experienced in administering enough food and fluids. A third transfusion was given from the original donor. After this, the climb to recovery was steady.

4. Loewenthal, L. J. A.: A New Cutaneous Manifestation in the Syndrome of Vitamin A Deficiency, Arch. Dermat. & Syph. **28**: 700 (Nov.) 1933.

5. Hutter, A. M., and Middleton, W. S., with the collaboration of Steenbock, Harry: Vitamin B Deficiency and the Atrophic Tongue, J. A. M. A. **101**: 1305 (Oct. 21) 1933.

6. Steenbock, Harry: Personal communication to the author.

1. The formula of Hartman's solution of physiological buffer salts (Lilly) is as follows: sodium lactate (lactic acid 85 per cent), 0.6 cc.; sodium chloride, 1.5 Gm.; potassium chloride, 0.1 Gm.; calcium chloride, 0.05 Gm.; distilled water, sufficient to make 10 cc. This stock solution is to be diluted twenty-five times before using.

The skin lesion was treated by Drs. J. L. Winstead and W. I. Wooten of the Pitt Community Hospital. Wet boric acid dressings were kept on the area almost continuously until the sloughing skin and subcutaneous tissue had cleared away, leaving a healthy granulating surface. Three weeks after admission to the hospital autoplastic grafting was started, as shown in the accompanying illustration. A small patch of tiny pinch grafts was put on every three or four days until the surface was covered. Practically every graft taken from the patient grew.

Isoplastic pinch grafts from the mother were tried, about 4 inches square being covered by her skin. These looked perfect for eight days and then the whole area covered by the mother's skin swelled up about half an inch above the level of the surrounding skin. There was vomiting, diarrhea and generalized urticaria, and the face was swollen markedly. This protein reaction continued for forty-eight hours and then subsided. As the swelling cleared from the isoplastic grafts they dried up and fell off while those taken from the patient on the same day grew.

Besides the lesion described, there were fifteen other vesicles which crusted over and spread out to about 25 mm. When these crusts were removed, a superficial ulcerated area was seen. They did not involve the entire thickness of the skin, as was the case in the major lesion.

The patient was discharged from the hospital in good condition sixty-four days after the onset of his illness. At the time of discharge the hemoglobin registered 110 per cent.

CONCLUSION

Frequent blood transfusion and large amounts of parenteral fluid are of decided value in the treatment of disseminated gangrene complicating chickenpox.

408 State Bank Building.

THE EYE DROPPER

T. J. DIMITRY, M.D., NEW ORLEANS

The construction of the eye dropper is such that the contained fluid comes in contact with its rubber bulb or cap, and this not alone at a time following a change in its position from the vertical to the horizontal but also when the rubber bulb has a greater pull than is necessary to fill merely a part of the glass tubing, and, as a result of this, the contents act on the rubber bulb and produce a change that becomes a source

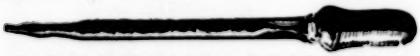

Fig. 1.—Eye dropper, made of glass. At the bulb end, the lumen of the tubing is reduced to capillary size. The outer dimensions remain in conformity to the rest of the tube.

of danger when dropped onto or into sensitive parts of the body. An applicable example is the danger at the time of a cataract extraction when an open wound is exposed to these products of rubber dissolution.

This danger is so obviously true concerning the harm that can come from the disintegrated rubber in an open wound that it was thought proper to devise an eye dropper that would prevent the fluid coming in contact with the rubber bulb and,

Fig. 2.—One or more capillary tubings are inserted into a glass tubing and made enduring by the application of heat. These smaller tubings prevent the fluid from coming in contact with the rubber bulb.

in doing so, remove a hazard that is commonly unrecognized by the ophthalmologist and is detracting from his endeavors in the prevention of blindness. Therefore, I submit an eye dropper or droppers that will minimize and probably entirely remove this danger, and without greatly increasing the cost of construction.

The tubing part is made of any length, of the same material, namely glass; the smaller end is unaltered and the rubber bulb remains the same. The difference in the type offered as compared to the old is featured at the rubber bulb end, in which the lumen is reduced to a capillary size, this being done without change in the outer dimensions of the tubing. At the time of its construction, when a part of the tubular glass is held in the flame and about to become a solid unit at the heated part, a small amount of air is blown from one end of the tube while yet in the flame. When the tube is removed from the flame, the diameter of the lumen of the part that was in the flame is governed by the amount or force of air blown through the tube. (The finished product is shown in figure 1.)

This dropper is most satisfactory and answers well the requirements, yet others may desire it to be made even more certain in action so as to avoid the vacuum lost, for the objection may be raised that the liquid can be made to enter the rubber after repeated pressure on the bulb and if the bulb happens not to fit perfectly to the tube, either because of oversize or of a decrement in its elasticity. For this reason, I produced dropper 2, which is shown in figure 2. It is made by inserting in the glass tubing a division having the appearance of the smaller end of a dropper in a glass tubing of larger size, and the large tubing retains the same pointed end as in the old type. This is accomplished by first making the tips. These are inserted into a glass tubing of larger size and made enduring by applying heat. Because of these divisions, the fluid cannot come in contact with the bulb, and the rubber, as a consequence, retains its physical and chemical qualities much longer.

Fig. 3.—A modification of Stern's container for eye medication.

The third is a modification of Stearn's container and eye dropper. This was also suggested because of contact of the liquids with the rubber caps. The objection can be overcome by utilizing the feature spoken of in dropper 2 and the reduction in size of the smaller end. This modification is shown in figure 3.

These types of eye droppers have been constructed for me by Mr. G. P. Seiler of this city.

Teresita Apartments, St. Charles at Napoleon Avenue.

A SIMPLE METHOD OF TREATING COMPLETE SEVERANCE OF THE URETHRA COMPLICATING FRACTURE OF THE PELVIS

JOHN K. ORMOND, M.D., AND ROBERT M. COTHRAN, M.D., DETROIT

Fracture of the pelvis is now a fairly common occurrence and is frequently complicated by rupture of the bladder or urethra and, at times, by complete severance of the bladder from the urethra. When this occurs the tear takes place at the point of exit of the urethra from the prostate, the gland itself with the prostatic urethra remaining attached to the bladder. In such cases immediate repair is urgently indicated, for if the repair is left till later the scar tissue and distortion resulting from the effects of the original trauma render a plastic operation difficult of performance and a stricture following the repair an almost inevitable sequel. For some years we have had under our care one such patient on whom Dr. Hugh Young had operated eleven years after his accident, obtaining a splendid result. The continuity of the urethra had been restored, allowing the cystostomy of eleven years' duration to close. But it is still necessary for him to have the urethra dilated from time to time.

In case the repair is made immediately and the continuity of the urethra restored before scar tissue has formed, there is apt to be much less trouble later. Unfortunately, these patients often suffer from shock and any lengthy procedure is contraindicated. Drainage of the bladder of course is necessary. In some cases good results in restoring urethral continuity have been obtained by the use of an indwelling catheter introduced at the time of operation.

In a recent case we made use of a simple method for restoring the continuity of the urethra which we believe has

From the Division of Urology, Henry Ford Hospital.

definite advantages over the indwelling catheter in effectiveness and is just as quickly and easily applicable.

REPORT OF CASE

A man, aged 47, was brought to the hospital in the early morning, following an automobile accident. He was found to have a fractured pelvis. There were no signs of rupture of the bladder or of urinary extravasation, but he was unable to void. In the afternoon, since he had not voided and since there was dulness rising above the symphysis, a catheter was passed, it being necessary to use a filiform and follower catheter on account of an old stricture in the perineal urethra.

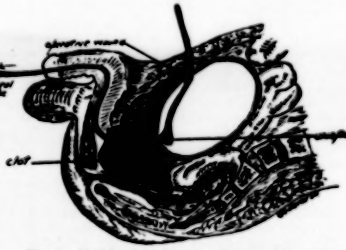

Fig. 1.—Uninflated bag in place but not drawn down.

A small amount of blood was obtained but no urine. Suprapubic operation was then done. The bladder was found distended with urine, and it and the prostate were completely torn away from the urethra, there being a large amount of clot and liquid blood in the subvesical space, into which the catheter had entered. Speed was essential on account of the patient's condition. Moreover, because of the pelvic fracture, it did not seem to us advisable to place him in the lithotomy position, which would have been necessary for suture of the urethra through the perineal approach. Accordingly, a small sound was passed through the urethra till the end was felt in the subvesical space; through the opened bladder a finger was passed through the prostatic urethra into the subvesical space, meeting the end of the sound and guiding it into the bladder. Then the urethral tube of a Pilcher bag was threaded onto the end of the sound and drawn out of the urethra. After the

Fig. 2.—Bag inflated and drawn down. The blood clot has been removed.

bag was distended with water, the neck of the bladder could be drawn down till it seemed to us that the lower pole of the prostate was in apposition to the torn end of the urethra, at the triangular ligament. This approximation was maintained by strapping the tube to the patient's thigh under just enough tension to hold the bladder neck snugly in place. It was left in this way for two weeks. The water was then allowed to escape from the bag, and the bag was drawn up out of the wound and cut off from the urethral tube, which was left in place as an indwelling catheter for a few days longer, and then withdrawn. As the suprapubic wound closed, the patient has been able to void freely and with perfect control. We have as yet no information concerning his sexual powers but feel sure that they stand a better chance of remaining intact than if an extensive perineal operation had been performed. He will, of course, be watched carefully for strictures, and the urethra will be dilated from time to time, for the old stricture requires this whether the scar of the healed rupture contracts or not.

The accompanying diagrams show the position of the bag and illustrate its use. The bladder is shown as if it were distended, in order to bring out the position of the bag more clearly. Obviously, with a suprapubic opening the bladder would in actual fact be collapsed.

The bag is commonly employed to produce hemostasis following suprapubic prostatectomy, and a few cases of temporary weakness of the external sphincter after its use have been reported. Being conical and lying in the prostatic bed, it must have been drawn partly into the membranous urethra, dilating it and causing ischemia. In a case such as we have described, this need not be feared, for two reasons: First, only moderate tension is necessary. Second, the bag lies wholly within the bladder and will not be drawn into the membranous urethra.

OSTEOMYELITIS OF THE RIB COMPLICATED BY EMPYEMA IN AN INFANT

RECOVERY OF BOTH PROCESSES FOLLOWING ASPIRATION OF EMPYEMA

I. J. WOLF, M.D., PATERSON, N. J., AND H. B. RING, M.D., PASSAIC, N. J.

This report is prompted by the complete recovery occurring in a case of osteomyelitis of the rib complicated by an empyema in an infant, in which conservative treatment was followed.

REPORT OF CASE

History.—Thomas P., aged 6 months, was admitted to the Barnert Hospital, Dec. 29, 1933. One month before he had caught cold, and a left otitis media developed a week later. A myringotomy was performed and the ear drained for three weeks. About a week after the ear was opened, an indurated swelling about *2* inches in diameter appeared on the right side of the back at the angle of the scapula. This seemed to recede somewhat and a few days later a much smaller swelling was noticed on the lower part of the right forearm. The infant's past history was irrelevant.

Physical Examination.—The temperature on admission was normal. During the examination the infant cried constantly but more so when the swellings on the back and forearm were manipulated. The left ear was draining slightly. The chest was clear; the abdomen was normal. The knee jerks were hyperactive, the left more so than the right. The right superficial abdominal reflex was not elicited. On the dorsum of the right forearm overlying the ulna at the junction of the lower third and the upper two thirds, a slightly reddened, fluctuant swelling was found about 24 mm. in circumference. A larger fluctuant swelling about the circumference of an orange was seen on the right side of the back at the angle of the scapula. These gave the impression of abscesses.

Progress.—The next day the infant was much less irritable. The evening temperature of the previous day was 104 F. The abscess on the back had completely disappeared, and the swelling on the right forearm was considerably smaller. When the chest was examined, unmistakable signs of fluid were found on the right side. This was striking, as the chest had been clear the day before. The respiratory rate was 40. A roentgenogram of the chest revealed a homogeneous opacity obliterating the right costophrenic and cardiophrenic angles and the axillary portion of the right lung; the heart was displaced to the left. In addition there was a considerable destruction of the right ninth rib near its angle. A roentgenogram of the wrist showed a stripping of the periosteum of the right ulna in its lower half.

December 31 a thoracocentesis was performed in the right posterior axillary line, but only a few drops of purulent hemorrhagic fluid were obtained.

January 1 the respiratory rate was 70; the infant was cyanotic. The temperature rose to 105 F. the evening of the

From the pediatric service of the Barnert Hospital, Paterson, N. J.

previous day. A second roentgenogram showed a homogeneous opacity of the entire right chest due to effusion. A blood culture taken on this day proved negative. A blood count revealed 3,800,000 red cells, 72,000 white blood cells, with 86 per cent polymorphonuclears, 2 per cent eosinophils and 12 per cent lymphocytes. The urine showed amorphous urates and an occasional epithelial and red blood cell. The infant's general condition was poor. He was placed in an oxygen tent and was kept stimulated.

January 3, 40 cc. of frank pus was aspirated from the right chest. On smear there were polymorphonuclear leukocytes and streptococci; on culture, a pure strain of hemolytic streptococci. Following the tap the infant's condition was markedly improved. The temperature and respiratory curves fell to normal and an uneventful recovery followed. January 5, a thoracocentesis proved unsuccessful. A roentgenogram, January 8, revealed considerably less fluid in the right side of the chest than on January 1, but more than on December 30. January 23, the fluid in the right chest was absorbed. The osteomyelitis of the rib showed healing. The wrist appeared unchanged and examination of the part showed induration.

March 3, the patient visited the clinic. He had gained 5 pounds (2.3 Kg.). Physical examination of the chest and wrist were negative. Roentgen examination also was negative. A blood Wassermann test was negative.

COMMENT

An osteomyelitis of the right ninth rib and the right ulna complicated a purulent otitis media in an infant aged 9 months. An abscess of the soft parts overlying the osteomyelitis of the rib subsequently ruptured into the pleural cavity. Whereas the chest had been clear the previous day, the right side was found to be filled with fluid subsequent to the disappearance of the abscess on the posterior chest wall. Roentgenographic examination corroborated this and revealed a well advanced osteomyelitis of the right ninth rib. The child became very toxic, dyspneic and cyanotic. His condition was very poor for several days. The case was treated as an ordinary empyema complicating a pneumonia. Tapping was resorted to, to relieve the fluid accumulation and to give the mediastinum an opportunity to become fixed. One aspiration of 40 cc. of pus was sufficient to enable the infant to resorb the remaining fluid, making thoracotomy unnecessary. Resection of the osteomyelitic portion of the rib was also unnecessary as it healed of its own accord, as did the process in the right ulna.

714 Broadway—112 Lexington Avenue.

OCCURRENCE OF DIABETIC GANGRENE IN AN UNUSUAL LOCATION

C. W. W. Elkin, M.D., Pittsburgh

This case of diabetes mellitus is reported because of the unusual location of the complicating gangrene and infection.

Mrs. S. L., aged 42, a married Jewish woman, seen in October 1931, gave a history of having had diabetes mellitus for six years, without any dietary or insulin treatment. After a short period of supervision of treatment, the patient went through a pelvic operation quite satisfactorily in November 1931, but refused to follow dietary instructions or take insulin. She was not seen again until Nov. 28, 1933, when she was found in a stuporous condition with "air hunger" and "acetone breath." Over the lower part of each labium majus was a large gangrenous area, from one of which (the right) was draining considerable pus. In addition there was a gangrenous area over each ischial region, with considerable sloughing of tissue on the right side. Between the labial and ischial areas involved there was practically continuous swelling, redness and induration, and on the right side an apparent subcutaneous sinus connecting the two areas. Through this sinus pus could be expressed. Marked glycosuria was present, the blood sugar being 0.240.

The patient refused hospitalization. Treatment with diet, insulin and local care of the infected gangrenous areas resulted in marked, rapid improvement, and Feb. 2, 1934, the wounds were healed and the diabetes well under control.

121 University Place.

POISONING BY CAMPHOR

William R. Klingensmith, M.D., Amarillo, Texas

Camphor poisoning is uncommon. Cases with a fatal termination have been reported.[1] Recovery following the ingestion of 450 grains (30 Gm.), and death from the ingestion of 18 grains (1.2 Gm.) is reported. Benz,[2] Haft,[3] Blair [1] and Cottrell [4] report recovery after the ingestion of varying amounts of camphor in oil. Osborne [5] says: "It is difficult to cause poisoning in the human unless the amount is excessive, then respiratory depression and convulsions might be caused." Stevens [6] says: "Toxic doses first produce excitement, nausea and vomiting, delirium and epileptiform convulsions, then coma and collapse." Neither text states that the outcome may be fatal. Recovery without sequelae or complications seems to be the rule; however, in Cottrell's [4] case very definite evidence of cerebral irritation continued for several days. Of the later reports in the literature, camphor in oil is universally the preparation ingested. The earlier reports in the literature [1a] indicate that a solution of camphor in alcohol may have been responsible for the poisoning in many instances. Probably alcoholic solutions are more rapidly absorbed, thus accounting for the incidence of more fatalities in the earlier reports. Clinical manifestations vary. Predominant among the cases reviewed are the following symptoms: convulsions, epileptiform in character; coma, and spasticity of musculature. Convulsions are severe and usually unattended by loss of sphincter control. The pulse rate, blood pressure and respiratory rate may be normal or increased. There is no criterion on which to base the diagnosis except the history or the detection of the drug in the stomach contents.

REPORT OF CASE

Miss N. T., aged 22, admitted to the Northwest Texas Hospital, Nov. 27, 1933, took by mistake, thirty minutes prior to admission, 2 ounces (60 cc.) of a 20 per cent solution of camphor in oil (180 grains, 12 Gm.). About twenty minutes later she became nauseated and vomited recently eaten food containing unmistakable evidence of camphor. The nausea was preceded by a slight burning in the epigastrium; otherwise there was no discomfort. Immediately following emesis she had a violent convulsion, epileptiform in character, unattended by loss of sphincter control. A few minutes later when seen she was pale, appeared terrorized and was unable to talk. Her hands and arms were in constant purposeless motion. An immediate examination revealed a general spasticity of the skeletal muscles and a slight increase in the patellar reflexes. The eyes responded sluggishly to light, the pupils being of equal size but irregular in outline. The blood pressure was 140 systolic, 90 diastolic; the pulse was 140.

At about the time these observations had been made she had the second violent convulsion, similar to the first. She was immediately given 1/100 grain (0.0006 Gm.) of scopolamine hydrobromide subcutaneously and 0.5 Gm. of sodium amytal intravenously. She responded at once, became completely relaxed and went into a profound sleep. The patient's stomach was then lavaged thoroughly with sodium bicarbonate solution. Two ounces of magnesium sulphate, saturated solution, was given through a lavage tube. Hypodermoclyses with 500 cc. of physiologic solution of sodium chloride completed the immediate treatment. About five hours later when she awoke there was no evidence of any confusion or distress except a severe headache. The next day, about twelve hours later, urine examination was negative and the leukocytes had risen to 13,400, with a normal differential count. Recovery was uneventful. The patient was discharged on the third day and readmitted on the fourth day. The complaint on readmission

1. (a) Emerson, J. H.: Camphor, Poisoning, in Reference Handbook of Medical Sciences, New York, William Wood & Co. 3: 460, 1908. (b) Blair, Jackson: Camphorated Oil Poisoning: Report of a Case, Ohio State M. J. 25: 808 (Oct.) 1929.
2. Benz, R. W.: Camphorated Oil Poisoning with No Mortality: Report of Twenty Cases, J. A. M. A. 73: 1217 (April 26) 1919.
3. Haft, H. H.: Camphor Liniment Poisoning, J. A. M. A. 84: 1571 (May 23) 1925.
4. Cottrell, J.: Poisoning by Camphorated Oil, Brit. M. J. 1: 97 (Jan. 17) 1931.
5. Osborne, O. T.: Principles of Therapeutics, Philadelphia, W. B. Saunders Company, 1922, p. 257.
6. Stevens, A. A.: A Textbook of Therapeutics, ed. 6, Philadelphia, W. B. Saunders Company, 1923, p. 141.

was malaise, anorexia and violent headache. The general examination revealed no abnormality except that the blood pressure was 154 systolic, 100 diastolic. Eyeground examination was negative. The icterus index was 6. Treatment was symptomatic; the blood pressure gradually returning to normal within the week. The patient continues in good health two months later.

COMMENT

Because of the increase in blood pressure and the rather persistent headache, the possibility of cerebral irritation was considered. However, a lumbar puncture was not done, nor was it insisted on in view of the rapid amelioration of the symptoms and the negative eyeground examination. Through the agency of glycogen the liver is able to detoxify camphor by conjunction to nontoxic glycuronates.[7] No evidence of liver damage has been apparent.

Fisk Medical and Professional Building.

Council on Pharmacy and Chemistry

SPECIAL REPORT OF THE COUNCIL

THE COUNCIL RECENTLY BECAME INTERESTED IN THE RELATION OF AMIDOPYRINE TO GRANULOCYTOPENIA. A MEMBER OF THE COUNCIL WHO IS ESPECIALLY INTERESTED IN THE PROBLEM WAS ASKED TO PREPARE A REPORT ON THE SUBJECT. DR. PAUL REZNIKOFF OF CORNELL UNIVERSITY MEDICAL COLLEGE, HAD PREPARED A BIBLIOGRAPHY ON THIS SUBJECT AND OFFERED THE MEMBER A REPORT BASED ON HIS INVESTIGATIONS. THIS WAS SUBMITTED TO THE COUNCIL FOR CONSIDERATION AND AS A RESULT THE COUNCIL SPONSORED PUBLICATION OF THE REPORT, AS FOLLOWS, TOGETHER WITH THE APPENDED COMMENT ON AMIDOPYRINE, WHICH WAS PREPARED IN THE COUNCIL'S OFFICE.

PAUL NICHOLAS LEECH, Secretary.

THE RELATION OF AMIDOPYRINE AND THE BARBITURIC ACID DERIVATIVES TO GRANULOCYTOPENIA

The etiology of granulocytopenia has been a matter of speculation for a considerable time. It was generally considered that individuals suffering from this condition had constitutionally defective granulopoietic tissue and that one of many contributing factors might cause an acute depression of the bone marrow. Some of these contributing factors were fatigue, menstruation and infection.

The experimental production of agranulocytosis was reported by Kracke in 1932.[1] Madison and Squier[2] reported before the sixth annual meeting of the Central Society for Clinical Research in Chicago, Oct. 27, 1933, that an analysis of thirteen consecutive cases showed that all of the patients were physicians, nurses or patients under a physician's care and that they all had been using drugs containing a barbiturate combined with amidopyrine. Of even greater interest was the observation of these workers that three of their patients after recovery had an abrupt or fluctuating drop in granulocytes after medication. In two cases single doses of a benzene ring derivative caused such a relapse.

Following this report many physicians found a similar condition in their patients. Watkins,[3] Grant,[4] Hench,[5] and McGuire,[6] all substantiate the observations of Madison and Squier. Since that time reports have been numerous indicating that amidopyrine is an important factor in the production of an acute attack of granulocytopenia. Rawls[7] reported two cases. Holten, Nielsen and Transbøl[8] described five fatal cases in patients who developed granulocytopenia after they had been hospitalized for other disorders and who received amidopyrine. In a subsequent report Madison and Squier[9] felt that in all their fourteen cases amidopyrine either alone or in combination with a barbiturate preceded directly the onset of the attack. Randall's[10] case might be added to this series. Hoffman, Butt and Hickey[11] report that thirteen of fourteen patients had received amidopyrine alone or in combination with other drugs and died. The fourteenth patient took dinitrophenol four times a day for two weeks and is certain that she received no other drugs. She recovered. Zinninger[12] found that two of her patients who died had been taking large amounts of amytal compound which contains amidopyrine, for a fairly long period of time. Recently Sturgis[13] reported before the Association of American Physicians his observations on granulocytopenia. In agreement with other workers he finds that amidopyrine is an important factor in the production of granulocytopenia.

Attempts to reproduce this condition in rabbits with amidopyrine have thus far not been very successful. Madison and Squier[9] produced a drop and an antemortem disappearance of granulocytes in one rabbit given large doses of allylisopropylbarbituric acid with amidopyrine (allonal) by mouth but failed in seventeen other rabbits to change the blood picture significantly. Hoffman, Butt and Hickey[11] obtained some depression in rabbits but they do not report any bone-marrow studies in their preliminary report.

Several questions have been raised by these important contributions to the question of etiology of granulocytopenia. Some of them are:

1. Is amidopyrine primarily responsible for the production of granulocytopenia?

2. Are the barbiturates themselves important in the causation of this condition?

3. Are any other predisposing, contributing or specific factors involved in this disease?

4. Assuming that amidopyrine is an etiologic agent in granulocytopenia, is it necessary to stop its general use, or modify its use, or do the conditions under which it is prescribed suggest that its relationship to granulocytopenia is within the realm of unavoidable accident and that any special caution may be disregarded?

As far as can be learned from the evidence at hand there can be no question that amidopyrine is very important in the production of granulocytopenia. In fact no other agent has been found, either chemical or bacterial, which has been a factor in causing so many attacks.

In the second place no definite case has been reported in which a barbiturate alone is responsible. From the present data it appears that barbiturates have little or nothing to do with granulocytopenia.

There also is no doubt that many cases of granulocytopenia have occurred in which amidopyrine has never been taken, or any other drug, for that matter. One patient had three attacks. She never took drugs of any sort previous to the attack and during her last attack she received a sedative containing amidopyrine, and she recovered promptly in spite of the constant administration of this drug throughout the acute phase of her illness. Moreover, it must be remembered that all patients who take or are given amidopyrine are suffering from some complaint or illness at the time the drug is being administered. There can be no question that fatigue[14] and menstruation[15]

7. Althausen, T. L.: Dextrose Therapy in Diseases of the Liver, J. A. M. A. **100**: 1163 (April 15) 1933.

1. Kracke, R. R.: Experimental Production of Agranulocytosis, Am. J. Clin. Path. **2**: 11 (Jan.) 1932.

2. Madison, F. W., and Squier, T. L.: Primary Granulocytopenia After Administration of Benzene Chain Derivatives, Central Society for Clinical Research, 6th Annual Meeting, Chicago, Oct. 27, 28, 1933. Reported in J. A. M. A. **101**: 2076 (Dec. 23) 1933.

3. Watkins, C. H. in discussion on Kracke;[1] The Possible Rôle of Barbiturates and Amidopyrine in Causation of Leukopenic States, Proc. Staff Meet., Mayo Clin. **8**: 713 (Nov. 22) 1933.

4. Grant, S. B., in discussion on Kracke.[1]

5. Hench, P. S., in discussion on Kracke.[1]

6. McGuire, J., in discussion on Kracke.[1]

7. Rawls, W. B.: Case Report: Neutropenia Developing During Amidopyrine Medication; Two Cases. Address before the Clinical Society of the New York Polyclinic Medical School and Hospital, Feb. 5, 1934. (Reported in the New York M. Week **12**: 6 [Feb. 3] 1934.)

8. Holten, C.; Nielsen, H. E., and Transbøl, K.: Five Nosocomial Cases of Agranulocytosis in Patients Treated with Amidopyrine; Contributions to Knowledge of Etiology of Agranulocytosis (Preliminary Report), Ugesk. f. læger **96**: 158 (Feb. 8) 1934; abstr. J. A. M. A. **102**: 1350 (April 21) 1934.

9. Madison, F. W., and Squier, T. L.: The Etiology of Primary Granulocytopenia (Agranulocytic Angina), J. A. M. A. **102**: 755 (March 10) 1934.

10. Randall, C. L.: Severe Granulopenia Following the Use of Barbiturates and Amidopyrine. Report of a Case, J. A. M. A. **102**: 1137 (April 7) 1934.

11. Hoffman, A. M.; Butt, E. M., and Hickey, N. G.: Neutropenia Following Amidopyrine (Preliminary Report), J. A. M. A. **102**: 1213 (April 14) 1934.

12. Zinninger, Pauline: Correspondence, J. A. M. A. **102**: 1420 (April 28) 1934.

13. Sturgis, C. C.: Observations Concerning the Etiology of Agranulocytosis, 49th Annual Meeting Assoc. of American Physicians, May 2, 1934, Atlantic City.

are important factors in inducing an attack quite apart from the drug therapy.

When one considers the enormous amount of amidopyrine consumed and the relatively few individuals afflicted with granulocytopenia, it is obvious that one is dealing with a question of sensitivity in certain patients rather than with a universal action of the drug. In some respects it is analogous to the use of arsphenamines and the occasional occurrence of hepatitis or panmyelophthisis. It would be desirable to determine susceptibility in patients before amidopyrine is administered by the use of a test dose and a blood count, or perhaps by patch test, but it is apparent that such a procedure is impractical. Of course, if a patient complains of a rash, dizziness or a chill after amidopyrine is given, it should be discontinued. Probably the safest course to follow is to use another drug such as acetylsalicylic acid, one of the barbiturates or codeine if any of these are just as effective as amidopyrine for any particular symptom. If, however, amidopyrine is found to be unrivaled in its action for a special complaint, it should not be administered for any great length of time, as a routine or in large doses unless white blood cell and differential counts are made at regular intervals. This is suggested, not because the occurrence of granulocytopenia is frequent but because, when it does occur, it is an extremely serious accident. The indiscriminate and unnecessary administration of amidopyrine, and the self administration by the public is certainly dangerous and should be discouraged.

Comment.—The Council fully concurs in the recommendation of Dr. Reznikoff discouraging the indiscriminate administration of amidopyrine, particularly the exploitation to the public in which individuals are importuned to resort to self medication. There are on the market many products containing amidopyrine. Some of these products are advertised to physicians; others to the public. Because of interest in amidopyrine and products contining it, the following statement is opportune:

Amidopyrine was prepared by Stolz in 1893 and was patented in Germany in 1897 under the proprietary name "Pyramidon." Shortly after its preparation, papers on the clinical use of amidopyrine (Pyramidon) appeared: Filehne: *Berl. klin. Wchnschr.*, 1896, No. 48, and *Ztschr. f. klin. Med.*, 1896, **32**, Nos. 5 and 6; Lepine: On the Therapeutic Value of Pyramidon, *Lyon med.*, 1897, No. 24. Pyramidon has been on the American market for at least twenty-five years; under the pharmacopeial designation "amidopyrine" the drug has been marketed by American manufacturers for approximately twelve years.

Practically all pharmaceutical manufacturers and physicians' supply houses sell one or more preparations which contain amidopyrine. In some instances the presence of the drug is indicated in the name of the preparation, in other cases the presence of amidopyrine can be determined only by a reading of the label or advertising material; in a few instances the presence of amidopyrine is not indicated in the name, on the label or in the advertising.

The introduction, more than ten years ago, of two widely advertised proprietary combinations of amidopyrine with a hypnotic drug of the barbituric acid series (Allonal and Peralga) was followed by the marketing of a number of preparations of this type. The following are representative examples: Amytal Compound (Eli Lilly & Co.); Amido-Neonal (Abbott Laboratories); Cibalgine (Ciba Co., Inc.); Pyraminal (H. A. Metz Laboratories); Neonal Compound Tablets (Abbott Laboratories); Phenamidal (Upjohn Co.); Neurodyne (Chicago Pharmacal Co.); Optalidon (Sandoz Chemical Works); and Amarbital Tablets (A. W. Kretschmar). None of these products has been accepted by the Council.

Amidopyrine is also marketed in combination with drugs other than barbital derivatives. The following are examples of some of the many preparations that contain amidopyrine in combination with one or more other drugs: Gynalgos-Wyeth, Amidophen-Lilly, Compral-Winthrop, Midol-General Drug Co., Dysco Tablets-Abbott, Cinchopyrine Tablets-Abbott, Kalms-Johnson & Johnson, Mylin-Mifflin Chemical Corp., Benzedo Compound Capsules-Abbott, Lumodrin-Wintrop and Hexin (Hexin, Inc.).

The examples that have been cited serve also to show the desirability of the rule of the Council which provides against the recognition of proprietary, uninformative names for well known pharmacopeial substances or for mixtures of well known drugs.

14. Reznikoff, Paul: Neutropenia, Laryngoscope **44**: 66 (Jan.) 1934. Scanlan, D. W.: Agranulocytosis (Pernicious Leukopenia) Including Report and History of a Primary Case, J. M. Soc. New Jersey **31**: 17 (Jan.) 1934.

15. Jackson Jr., H., and Merrill, D.: Agranulocytic Angina Associated with the Menstrual Cycle, New England J. Med. **210**: 175 (Jan. 25) 1934. Thompson, W. P.: Observations on the Possible Relation Between Agranulocytosis and Menstruation with Further Studies on a Case of Cyclic Neutropenia, New England J. Med. **210**: 176 (Jan. 25) 1934.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS. PAUL NICHOLAS LEECH, Secretary.

ALPHA NAPHCO AND DOSAGE FORMS OMITTED FROM N. N. R.

Alpha-Naphco, which is a compound solution of alpha-naphthol, contains 10 Gm. alpha-naphthol, 32 Gm. glycerin, 23.8 Gm. soft soap (prepared from cottonseed oil and potassium hydroxide), water to make 100 Gm. and gluside and essential oils to flavor. Although the description in New and Nonofficial Remedies, 1933, did not mention beta-naphthol, it has been admitted that the product contains about 1.5 per cent beta-naphthol. It is marketed by the Carel Laboratories, Redondo, Calif.

The following six dosage forms were accepted by the Council:

1. Alpha-Naphco Camphor Nasal Unguent.—containing *2* per cent alpha-naphco and *2* per cent camphor in petrolatum.
2. Alpha-Naphco Cones.—made of Alpha-Naphco, boric acid and sodium bicarbonate. They are recommended on the label for "gynecological applications."
3. Alpha-Naphco Menthol Suppositories.—containing Alpha-Naphco, menthol, oil of theobroma and yellow wax. On the label they are recommended for "gynecological applications."
4. Alpha-Naphco Rectal Suppositories.
5. Alpha-Naphco Zinc Stearate Camphor Ointment.
6. Alpha-Naphco Zinc Stearate Powder.

Consideration of Alpha-Naphco by the Council began in 1923. The product was rejected under the name Benetol in 1927. Following this there were three years filled with correspondence and discussion, voluminous evidence of the Council's attempt to cooperate with a manufacturer who had difficulty in making his product and advertising methods acceptable to the Council. Finally, after many changes in composition, labels, dosage forms and advertising matter, the product was accepted under the name Alpha-Naphco in 1930. The firm was given permission to use on labels and advertisements the statement "formerly Benetol" in accordance with the Council's custom when such changes of name are made. The Council customarily limits the use of such a statement to one year from date of acceptance; through oversight, the firm was not informed at the time of acceptance of this limitation.

Space does not permit recounting of the long history of difficulties in making and keeping Alpha-Naphco acceptable. The firm would promise compliance and seem to agree to required changes and limitations. But each submission of labels or circulars presented some of the old defects and some new circumvention of the agreements. The firm apparently tried to conform to most of the requirements but either did not comprehend the rules or neglected them. When the period of acceptance expired in 1933, the firm was asked to submit advertising and labels to aid the Council in consideration of the continued eligibility of the product for inclusion in New and Nonofficial Remedies. The Council's referee found that the material still contained objectionable statements, some of which were in direct contravention of the numerous explanations the firm had received.

In reporting on the eligibility of Alpha-Naphco for reacceptance, the Council's referee, without discussion of these infractions of the Council's instructions, considered the following more fundamental questions:

(1) Is Alpha-Naphco of sufficient prophylactic and therapeutic value as an antiseptic to warrant continued inclusion in New and Nonofficial Remedies; and (2) Do not the complexities of the preparation and its dosage forms place the product

in conflict with Rule 10 (Unscientific and Useless Articles—mixtures containing an excessive number of ingredients)?

The Alpha-Naphco preparations are recommended chiefly for local use as an antiseptic and germicide. The present evidence of their usefulness for this purpose is inadequate; nor is there convincing proof that the alpha-naphthol by itself exerts any more antiseptic action than do some of the other constituents in these preparations. The phenol coefficient of Alpha-Naphco is said to be 1.46. Evidence was supplied in March 1932 by reports from a commercial laboratory that a 1:300 solution of Alpha-Naphco will kill Staphylococcus aureus in five minutes. The preparation is a weak antiseptic and germicide.

These reports of the commercial laboratory which were considered by the Council in February 1931 compared the antiseptic and germicidal properties of Alpha-Naphco with those of phenol, cresol and surgical solution of chlorinated soda, when tested against Staphylococcus aureus in water, blood serum, saliva, and equal parts of saliva and blood serum. The preparation was found to be much more active than surgical solution of chlorinated soda in the presence of saliva and of serum, about three times as active as phenol, and slightly more active than compound solution of cresol, U. S. P. Other tests with Alpha-Naphco were also made against B. pyocyaneus, B. typhosus, and B. anthracis. The protocols of the latter tests as given in the reports are too brief to be of value, there being no complete statement of the conditions. It must be pointed out that the other substances with which Alpha-Naphco was compared in these tests are generally considered to be weak antiseptics and the value in such test tube experiments in proving the efficacy of antiseptics when applied to the skin or mucous membranes is questionable. The firm was informed (March 19, 1932) that tests under such conditions do not simulate those in wounds or infected body cavities.

The value of Alpha-Naphco as an intestinal antiseptic was taken up in another report, at which time the results of tests on human beings were presented by the firm and discussed. These tests showed that the compound acted as an intestinal antiseptic only in very large doses and the claims for its use for this purpose were not accepted. Except for these tests, no evidence has been presented by the firm to support its claims for the antiseptic or germicidal action of alpha-naphthol when applied to skin or mucous membranes.

It is pointed out in Cushing's "Pharmacology and Therapeutics" that substances such as pyrogallol, naphthol and chrysarobin may owe their effects in skin diseases as much to slight irritation and improved nutrition as to their retarding effect on the growth of micro-organisms. It certainly seems that there are many antiseptics other than those of the phenol-cresol-naphthol group which are stronger and preferable for use on the skin, especially in first aid.

The use of naphthol preparations in the nose and throat is of very doubtful value. Both alpha and beta naphthol have an irritating effect on the mucous membranes. The antiseptic action of Alpha-Naphco when used as a spray or gargle, or its value in preventing colds, as claimed by the manufacturer is questionable. The Council has opposed the exploitation of antiseptic mouth washes and gargles.

Similar questions may be raised in regard to the three suppository preparations offered by the firm. Whatever favorable effects these may have might be attributed to the action of the wax or boric acid vehicles. The Alpha-Naphco-Zinc powder is probably little more useful than other similar powders not containing alpha-naphthol.

Attention must also be called to the constituents other than alpha-naphthol of several of the preparations. Two of them contain camphor, which is itself an antiseptic. One of the suppositories contains menthol, and the cones contain a large amount of boric acid in addition to the Alpha-Naphco. It also is not unlikely that the soap contained in these preparations may exert an antiseptic effect in contact with the skin and mucous membranes almost equal to that of the other constituents.

Since the first presentation of the products, a few minor changes have been made in the composition of the preparations. The original Benetol ointment contained menthol, 0.3 per cent, zinc oxide, 5 per cent, and boric acid, 3 per cent in addition to the other constituents now in the ointment and these have been omitted from the present Alpha-Naphco Camphor Ointment. Other changes in composition were omission of 0.1 per cent and 0.2 per cent menthol, respectively, from the cones and rectal suppositories. The original Benetol powder contained 3 per cent bismuth subnitrate, 12 per cent zinc oxide and 30 per cent boric acid, which were later omitted. No changes were made in Alpha-Naphco (Benetol) itself or in the nasal unguent or the menthol suppositories. In retrospect it appears that the only noteworthy changes were those made in the ointment and in the powder. Although these revised formulas were considered at the time not to be in conflict with rule 10, the Council decided, on reconsideration, that many of the preparations are still too complex, and therefore are in conflict with rule 10. Were Alpha-Naphco able to stand on its own merits, it would hardly seem necessary to include camphor in the preparations.

The Council voted that Alpha-Naphco and its dosage forms be omitted from New and Nonofficial Remedies (*a*) because there is no reliable evidence that this weak antiseptic is of prophylactic or therapeutic value, (*b*) because the complexities of the mixtures place them in conflict with rule 10, and (*c*) because of difficulties in controlling the claims and advertising matter of the firm.

ASTHMOLYSIN AND SPASMOLYSIN NOT ACCEPTABLE FOR N. N. R.

Asthmolysin, manufactured by Dr. Kade of Berlin, is promoted by H. H. Beisner of New York City. It is claimed to be a preparation of outstanding therapeutic value in asthma: It has been the subject of many inquiries addressed to the Council in the past ten years. Asthmolysin is stated to have been "discovered during 1912 by Dr. Weiss, an authority on Asthma, of Berlin, Germany."

It is alleged to be "prepared according to a special method," details of which are not given. Other advertising states that the product consists of the active principles of the suprarenal and hypophysis cerebri prepared according to a secret process. No biologic or pharmacologic standardization is mentioned on the label or in the advertising. The mixture of pituitary extracts with epinephrine if, indeed, there is epinephrine in the preparation, would appear to be therapeutically inconsistent, since hypophyseal extracts, by their general stimulation of smooth muscle, are contraindicated in asthma because of the possibility of enhancing or aggravating the constriction of the bronchioli and alveolar ducts. Any effect in asthma which this preparation may exert is therefore in spite of the pituitary extract which is said to be present; a mixture containing epinephrine and pituitary is unscientific and not to be commended.

It was pointed out in THE JOURNAL, Oct. 1, 1927, page 1170, that the firm alleged that it had obtained testimonials from 121 physicians. As THE JOURNAL stated,

> "Such testimonials, given for a semisecret preparation of unscientific character, are no credit to those members of the supposedly learned profession that gave them."

Testimonials, whether lay or professional, are a time-honored and overworked means of promoting valueless products concerning which no truly scientific evidence of therapeutic efficacy can be adduced.

A postscript to a letter issued by the firm states:

> "You may have cases of EPILEPSY. If so, attached reprint on Spasmolysin will interest you."

According to a "reprint," Spasmolysin has the following formula (?): "Asthmolysin + Parathyroid Extract." According to the generally accepted criteria for formula writing, the foregoing presents certain obvious if not glaring deficiencies. No one has ever demonstrated any relationship between suprarenal, hypophysis and parathyroid, on the one hand, and epilepsy on the other. Spasmolysin would then seem to be a preparation typical of the unscientific, irrational mixtures which will be avoided by the scientifically trained physician.

The Council declared Asthmolysin and Spasmolysin not acceptable for New and Nonofficial Remedies because they are semisecret, unscientific preparations marketed under proprietary and therapeutically suggestive names with exaggerated and unwarranted claims, which tend to replace well known drugs of proved effect in corresponding disorders.

Committee on Foods

ACCEPTED FOODS

The following products have been accepted by the Committee on Foods of the American Medical Association following any necessary corrections of the labels and advertising to conform to the Rules and Regulations. These products are approved for advertising in the publications of the American Medical Association, and for general promulgation to the public. They will be included in the Book of Accepted Foods to be published by the American Medical Association.

Raymond Hertwig, Secretary.

IRRADIATED VITAMIN D PASTEURIZED MILK

(1) Adohr Milk Farms'
(2) Joppe's
(3) F. B. Mallory, Inc.
(4) Pure White Dairy Company's Jersey, Special and Holstein
(5) Rochester Dairy Company's
(6) Telling-Belle Vernon Company's
(7) Valley Bell

Distributors.—(1) Adohr Milk Farms, Los Angeles; (2) Joppe's Dairy, Grand Rapids, Mich.; (3) F. B. Mallory, Inc., Springfield, Mass.; (4) Pure White Dairy Company, Tulsa, Okla.; (5) Rochester Dairy Company, Rochester, Minn.; (6) The Telling-Belle Vernon Company, Cleveland; (7) Valley Bell Dairy Company, Inc., Charleston, W. Va.

Description.—Bottled pasteurized vitamin D milk irradiated with ultraviolet rays (patent No. 1,680,818).

Preparation.—The milk complies with legal requirements and is pasteurized by the standard holding method. For description of irradiation, see The Journal, Oct. 7, 1933, page 1155.

Vitamins.—Clinical investigation shows this milk to be a reliable antirachitic agent if proper amount is used. Contains 135 U. S. P. X (Revised, 1934) vitamin D units per quart.

Claims of Distributors.—Irradiated antirachitic pasteurized milk having otherwise the flavor and food values of usual pasteurized milk.

STOKELY'S FOR BABY SPECIALLY PREPARED STRAINED PEAS

Seasoned with Salt

Manufacturer.—Stokely Brothers & Company, Inc., Indianapolis.

Description.—Sieved peas slightly seasoned with salt. Largely retains the natural minerals and vitamins.

Manufacture.—Fresh peas, harvested at the height of development while still in the tender, succulent stage, are shelled, thoroughly washed, inspected to eliminate any defective peas, and graded; the selected peas are given a minimum blanch in hot water, removed from the water, steamed in a closed kettle until soft, comminuted, canned and processed as described for Stokely's Strained Green Beans (The Journal, May 26, 1934, p. 1762).

Analysis (submitted by manufacturer).—

	per cent
Moisture	86.6
Total solids	13.4
Ash	1.1
Sodium chloride	0.7
Fat (ether extract)	0.4
Protein (N × 6.25)	3.5
Reducing sugars as dextrose	0.2
Sucrose (copper reduction method)	2.3
Crude fiber	0.8
Carbohydrates other than crude fiber (by difference)	7.6
Alkalinity of ash (cc. normal acid per gram ash)	4.1
pH	5.6

Calories.—0.5 per gram; 14 per ounce.

Vitamins.—The natural vitamin content is retained in large measure in the manufacturing process by the use of equipment and procedure which exclude incorporation of air; the vegetable material is exposed to steam only.

Claims of Manufacturer.—Supplementary to the infant milk diet, and valuable for children and adults on soft diets. Has smooth consistency and supplies desirable bulk without roughness. The straining renders the nutrient content readily available for digestion. Scientifically prepared to retain in high degree the natural flavor, mineral and vitamin values. Seasoned to bring out full flavor and packed in enamel lined cans. Requires only warming for serving.

18-K BRAND VACUUM PACKED FRESH ROASTED COFFEE

Manufacturer.—Winston and Newell Company, Minneapolis.

Description.—Ground roasted coffee packed in tins under "vacuum."

Manufacture.—The coffee beans are blended and roasted in one operation, screened and granulated. The chaff is removed by air, ground and remixed with the coffee. The coarsely ground coffee is packed in tins which are sealed under "vacuum."

Analysis (submitted by manufacturer).—

	per cent
Moisture	5.0
Ash	4.0
Fat (petroleum ether extract)	15.6
Total nitrogen	2.2
Protein nitrogen	1.9
Protein (noncaffeine N × 6.25)	11.9
Crude fiber	11.3
Carbohydrates other than crude fiber (by difference)	51.0
Caffeine	1.2

Claims of Manufacturer.—Sealed in "vacuum" to retain freshness and flavor.

(1) SANTA FE BRAND CRYSTAL WHITE TABLE SYRUP
(2) SANTA FE BRAND GOLDEN SYRUP

Distributor.—The Ranney-Davis Mercantile Company, Arkansas City and Anthony, Kan.; Enid, Ponca City and Woodward, Okla.

Packer.—The Hubinger Company, Keokuk, Iowa.

Description.—(1) Table syrup; corn syrup flavored with sucrose syrup and vanilla extract.

(2) Table syrup; corn syrup flavored with refiners' syrup.

Manufacture.—The same as Hubinger Crystal White Syrup, The Journal, Jan. 27, 1934, page 293, and Hubinger Golden Table Syrup, The Journal, Jan. 20, 1934, page 213.

Claims of Manufacturer.—Recommended for use as an easily digestible and readily assimilable carbohydrate supplement to milk in infant feeding and as a syrup for cooking, baking and the table.

BEECH-NUT PRESSURE COOKED FARINA-OATMEAL-WHEAT GERM BLEND CERE-JEL

(Slightly Seasoned with Salt)

Manufacturer.—Beech-Nut Packing Company, Canajoharie, N. Y.

Description.—Sieved cooked farina, oatmeal and wheat germ retaining in high degree the natural vitamin and mineral content; seasoned with salt.

Manufacture.—Farina, oatmeal, wheat germ and salt in definite proportions are cooked in water, strained, packed and processed as described for Beech-Nut Pressure-Cooked Farina Cere-Jel (The Journal, May 26, 1934, p. 1762) and Beech-Nut Strained Carrots (The Journal, Nov. 11, 1933, p. 1562).

Analysis (submitted by manufacturer).—

	per cent
Moisture	86.5
Total solids	13.5
Ash	0.9
Sodium chloride	0.5
Fat (ether extract)	0.2
Protein (N × 6.25)	2.2
Crude fiber	0.2
Carbohydrates other than crude fiber (by difference)	10.0

Calories.—0.5 per gram; 14 per ounce.

Claims of Manufacturer.—Especially intended for infants, children and convalescents and for special smooth diets. Only warming is required for serving. The natural mineral and vitamin values are efficiently retained.

MEAD'S BREWERS YEAST POWDER
MEAD'S BREWERS YEAST TABLETS

Manufacturer.—Mead Johnson and Company, Evansville, Ind.

Description.—Dried brewers' yeast in powder form or in tablets.

Manufacture.—Brewers' yeast is cultured, harvested, spray dried and packed in powder form or in 6-grain tablets (compressed). For spray drying, a suspension of the yeast in water is sprayed into a current of heated air. Dehydration is practically instantaneous, the dry powder falling to the base of the drying chamber, from which it is automatically and continuously removed. The temperature attained by the yeast is less than 100 C. and probably not over 70 C. and the heating time probably less than thirty seconds.

The yeast is cultivated by inoculating a sterilized wort containing dextrose, sucrose and raffinose of molasses and other vegetable products and nutrient minerals of organic and inorganic origin, with a pure culture of Saccharomyces carlsbergensis. The fermentation is carried on in a filtered air atmosphere and is much slower than for aerated bakers' yeast. The yeast is harvested centrifugally.

Analysis (submitted by manufacturer).—

	per cent
Moisture	5.0
Ash	6.0
Fat (Mojonnier method)	2.0
Protein (N × 6.25)	48.0
Crude fiber	0.0
Carbohydrates (by difference)	39.0

Calories.—3.7 per gram; 105 per ounce.

Vitamins.—Biologic tests show 13 and 10 Chick and Roscoe vitamins B and G units respectively per gram.

Claims of Manufacturer.—Rich source of vitamins B and G.

CALIFORNIA HOME BRAND PURE TOMATO JUICE

Manufacturer.—California Conserving Company, Inc., San Francisco.

Description.—Tomato juice seasoned with salt, retaining in high degree the natural vitamins.

Manufacture.—California ripe tomatoes are inspected, mechanically washed, scalded, spray washed, hand peeled and cored. The juice is expressed without beating or agitating, homogenized under 1,500 pounds pressure, "vacuumized" to remove incorporated air, seasoned with salt, canned, and processed for four minutes at 90 C. The cans are sealed and heated for fifteen minutes at 100 C.

Analysis (submitted by manufacturer).—

	per cent
Moisture	94.5
Total solids	5.5
Ash	0.8
Sodium chloride	0.4
Fat (ether extract)	0.1
Protein (N × 6.25)	0.9
Crude fiber	0.1
Carbohydrates other than crude fiber (by difference)	3.6

Calories.—0.2 per gram; 6 per ounce.

Vitamins.—Process is efficient to retain vitamins A and C in high degree.

Claims of Manufacturer.—Especially prepared for table use and as a vitamin C supplementary food for infant feeding. The speed of handling tomatoes from field to finished product keeps mold and bacteria at a minimum and protects tomato flavor and color.

GOETZE'S QUALITY WIENERS SAUSAGE

Manufacturer.—Albert F. Goetze, Inc., Baltimore.

Description.—Smoked cooked (79 C.) sausage containing cured U. S. government inspected and passed pork and beef, salt, corn syrup, mixed ground spices, paprika and sodium nitrate.

Manufacture.—U. S. government inspected and passed beef (minus sinews) and pork trimmings are cured for forty-eight hours by addition of a mixture of salt, sodium nitrate and sugar, and ground separately. The beef and spices are chopped together, the pork is added, and the mixture is further chopped at 7 C., stuffed into selected sheep casings, which are linked, cooled for twelve hours at 3 C., sprayed with cold water and allowed to hang at room temperature for two hours. The sausage is smoked at from 50 to 82 C. for one and one-half hours, with clean hardwood sawdust smoke, cooked for ten minutes at 79 C., cold water sprayed, dried, banded, packed in cartons and delivered under refrigeration.

Analysis (submitted by manufacturer).—

	per cent
Moisture	57.5
Ash	2.2
Fat (ether extract)	23.6
Protein (N × 6.25)	13.4
Carbohydrates (by difference)	3.1

Calories.—2.8 per gram; 80 per ounce.

KRIM-KO CHOCOLATE FLAVORED DRINK

Manufacturer.—Krim-Ko Company, Chicago.

Description.—Pasteurized chocolate flavored sweetened skim milk; contains skim milk (from 0.5 to 1.5 per cent milk fat), sucrose, chocolate and cocoa, tapioca flour, salt and traces of tartaric acid and agar; flavored with imitation vanilla extract.

Manufacture.—The skim milk is brought to a temperature of 60 C. in a milk vat containing an agitator and steam coils. A definite proportion of Krim-Ko Chocolate Flavored Drink Base (THE JOURNAL, June 2, 1934, p. 1851) is added, the temperature of the mix is brought to 82 C. and maintained for twenty minutes, after which it is cooled to approximately 4 C. and bottled in milk bottles for distribution to consumers. The mixture is kept under refrigeration until the time of delivery.

The product is prepared and distributed under license contract issued by the manufacturer of Krim-Ko Chocolate Flavored Drink Base.

Analysis (submitted by manufacturer).—

	per cent
Moisture	79.7
Ash	0.9
Fat (ether extract)	1.4
Protein (N × 6.25)	2.2
Reducing sugars as invert sugar	4.5
*Reducing sugars as lactose	4.6
Sucrose (copper reduction method)	2.4
Crude fiber	0.1
Carbohydrates other than crude fiber (by difference)	15.7
*Caffeine and theobromine	0.02

* Calculated from composition of Krim-Ko's chocolate flavored Drink Base (THE JOURNAL, June 2, 1934, p. 1851) or milk ingredients.

Calories.—0.8 per gram; 22 per ounce.

SUNSHINE DUTCH RUSK

Distributor.—Loose-Wiles Biscuit Company, Chicago.

Manufacturer.—Dutch Tea Rusk Company, Holland, Mich.

Description.—Round slices of toast prepared from flour, water, sucrose, shortening, malt extract, milk, eggs, yeast, salt, lactose, baking soda and lecithin; the same as the accepted Hekman's Dutch Tea Rusks, THE JOURNAL, April 22, 1933, page 1238.

SUNKIST BISCUIT FLOUR
BLEACHED

Manufacturer.—Maney Milling Company, Omaha.

Description.—Self rising flour containing short patent flour, hydrogenated cottonseed oil, dry skim milk, sugar, calcium acid phosphate, sodium acid pyrophosphate, salt, and sodium bicarbonate.

Manufacture.—All ingredients excepting the shortening are thoroughly mixed; the shortening is then worked in. The mix is automatically packed in glassine bags in cartons.

Analysis (submitted by manufacturer).—

	per cent
Moisture	8.8
Ash	4.0
Fat (ether extraction method)	12.5
Protein (N × 3.7)	8.8
Crude fiber	0.2
Carbohydrates other than crude fiber (by difference)	65.7

Calories.—4.1 per gram; 116 per ounce.

GOLD COIN EVAPORATED MILK

Manufacturer.—Consolidated Dairy Products Co., Seattle.

Description.—Canned unsweetened sterilized evaporated milk, the same as Federal and Darigold Brands Unsweetened Evaporated Milk (THE JOURNAL, Dec. 3, 1932, p. 1949).

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 30, 1934

THE RIDDLE OF MIGRAINE

The truth of the idea that "a multiplicity of remedies advocated for the treatment of any one disease indicates poverty rather than wealth in therapy" is well illustrated by migraine. A hundred miscellaneous "remedies" have been advanced for the treatment of migraine, and still it is largely incurable. The addition of more remedies for migraine merely adds to the embarrassment of riches unless the new remedies throw a ray of light on the essential nature of the condition and make treatment more rational.

Thomas C. Hunt,[1] in an article on bilious migraine, reports a reinvestigation by newer methods — bile drainage and cholecystography — of the old and generally abandoned idea that migraine has something to do with biliary disturbance. He concludes that local gallbladder disease or dysfunction is *not* a cause of migraine but probably rather a result. This does not, however, discourage him from trying bile salts for the purpose of influencing "liver function," which he still believes must somehow be deranged in this disease. He reports that sodium glycocholate and a proprietary preparation of dehydrocholic acid produced considerable improvement in nineteen among twenty-two patients, provided the use of the remedy was maintained and its dose doubled when an attack seemed to be threatening. Of the patients that were relieved, nine had no attacks while under treatment and the others had the number of attacks considerably reduced. He believes that this result suggests that some hepatic dysfunction may be the cause of migraine in certain cases. Unfortunately this conclusion *ex juvantibus* as to the cause of migraine is hardly tenable, as strangely similar results are claimed for quite a number of other treatments: from the correction of eye strain to avoidance of "offending" foods as determined by skin tests, or the use of peptone, of cannabis or of glyceryl trinitrate.

Obviously, when so many different agents can influence a certain condition the rational view must be unitarian and focus attention on the one factor common to them all: this must be the psychic factor. Therefore, instead of proving the thesis of a "biliary" migraine, the partial success of the bile salt treatment merely adds another means of escape from the manifestations of this condition, provided the physician as well as the patient has sufficient faith in it. When a rational remedy is found, its effects are much more definitely predictable than is evidently the case with bile salts in the treatment of migraine.

In the same way, success in securing relief of an attack of migraine by means of slow hypodermic injections of epinephrine, in doses of from 0.6 to 1.3 cc. of the solution, cannot be cited as a proof of the "allergic" nature of this disease or as analogous to the definite effect of epinephrine in asthma. It is even impossible to speculate on the manner in which such relief is obtained in those cases in which it is secured. Nearly every well developed attack of migraine passes through two stages: that of vasoconstriction followed by vasodilatation; and a vasodilator such as glyceryl trinitrate, which may produce relief in the one stage, may aggravate the other. In experiments, the brain volume has been shown to be increased — probably passively—by epinephrine; and, as Hunt finds that the effect is better the earlier in the attack it is given, which would coincide with the stage of vasoconstriction, the actual mode by which epinephrine produced relief might be the same as that of glyceryl trinitrate. Perhaps epinephrine is a remedy of real value as far as correcting the abnormal distribution of the blood in an attack of migraine is concerned; but there is need to know whether it is to be used in the stage of vasoconstriction or the stage of vasodilatation.

1. Hunt, T. C.: Bilious Migraine: Its Treatment with Bile Salt Preparations, Lancet **2**: 279 (Aug. 5) 1933.

THE MECHANISM OF EXOPHTHALMOS

"Apart from gross neoplastic and inflammatory lesions of the orbit, the mechanism of exophthalmos is still little understood." This curious statement emanates from the textbook of Brain,[1] one of the leading members of the distinguished London school of neurologists; nevertheless the mechanism of exophthalmos is well understood, though the knowledge would seem to be poorly disseminated. This fault must be laid in part at the door of the anatomists, who, though describing accurately enough the external ocular muscles controlled by the third, fourth and sixth cranial nerves, have failed to teach the known anatomic knowledge in regard to the antagonists of these muscles, which are unstriated and controlled by sympathetic nerves. The physiologists, too, must share the blame; for what explanation do they offer of the delicately balanced muscular mechanism that results in normal binocular vision and in diplopia when this mechanism is disturbed? Are we to believe that the powerful rectus muscles do not contract against equally

1. Brain, W. R.: Diseases of the Nervous System, London, Oxford University Press, 1933.

powerful antagonists? Such an assumption is physiologically untenable.

Fortunately the *argumentum ad absurdum* is not required, for sound anatomic and physiologic evidence is available. In 1858 Heinrich Müller described briefly three groups of plain muscle fibers—one bridging over the infra-orbital fissure, and one in each eyelid—which constitute the so-called muscle of Müller. It has been theoretically advanced that a spastic condition of Müller's muscle causes the type of exophthalmos now under discussion, but its obvious inadequacy from both its size and its position to produce exophthalmos makes such an explanation unsatisfactory. Other theories have been advanced but none have been accepted.

Landström [2] in 1907 published the results of a careful histologic study of the orbital contents. He removed intact by subperiosteal dissection the contents of several orbits, together with the lids and septum orbitale, and sectioned them serially in various planes. His preparations revealed a well developed cylinder of plain muscle arising from the septum orbitale anteriorly and inserted just posterior to the equator of the ball. The results of his work he summarizes thus: "The bulbus oculi, enclosed within a connective tissue capsule and surrounded by a pad of fat, is suspended in the orbit anteriorly by a cylinder-shaped plain muscle running from the septum orbitale to the equator of the bulbus, and posteriorly by the rectus muscles." Exophthalmos is produced when the hypertonicity of this cuff of plain muscle—the opponens recti—overcomes the tonus of its antagonists—the rectus muscles.

Landström's histologic work served to confirm the important observations of MacCallum and Cornell.[3] These authors removed the roof of the orbit and orbital fat in dogs and on electrically stimulating the cervical sympathetic produced great exophthalmos and observed peristaltic waves passing backward throughout the tissue surrounding the eyeball. By dissection and histologic study they were able to demonstrate the presence of smooth muscle fibers forming a conical mantle about the ball, with anterior and posterior attachments essentially as described later by Landström.

The literature has been reviewed by Friedgood [4] in a paper confirming and greatly extending some observations of Barker and Hanes.[5] His paper contains abundant evidence from the clinical side that exophthalmos and other eye signs are the result of hypertonicity of the plain muscles of the orbit due to sympathetic overstimulation. It is, of course, well known that enophthalmos, myosis and ptosis (Horner's syndrome) are due to interruption of the sympathetic innervation of orbital plain muscles.

2. Landström, John: Ueber Morbus Basedowii, thesis, Stockholm, 1907.
3. MacCallum, W. G., and Cornell, W. B.: The Mechanism of Exophthalmos, M. News, Oct. 15, 1904.
4. Friedgood, H. B.: The Ocular Manifestations of Sympathetic Nervous System Hyperactivity in Conditions Other than Exophthalmic Goiter and Especially in Essential Hypertension, Am. J. M. Sc. **180**: 836 (Dec.) 1930.
5. Barker, L. F., and Hanes, F. M.: Exophthalmos and Other Eye Signs in Chronic Nephritis, Am. J. M. Sc. **138**: 469, 1909.

POSTOPERATIVE EDEMA

Edema is one of the common symptoms with which the practicing physician is forced to cope. Certain types of edema have long been recognized as concomitants of circulatory or renal disorders, notably in association with heart disease, venous and lymphatic obstruction and acute glomerular nephritis. Of late, considerable interest has been centered in a formerly unrecognized cause of fluid accumulation in the tissues in which the dominant factor is a lowered content of protein in the blood plasma. Experiments on animals have confirmed the development of so-called nutritional edema, commonly described as "war edema" during the World War, as a result of protein deficiency in the diet. As a recent writer [1] has summarized present knowledge, chronic malnutrition, from whatever cause, and particularly dietary deficiency of protein, is invariably associated with a decrease in plasma protein. The albumin fraction is especially affected, because it is formed with greater difficulty than globulin. If the reduction in plasma protein, and especially of albumin, is sufficient, edema develops. In so-called nephrosis of man, in which two of the chief manifestations are the excretion of large quantities of protein in the urine and edema, accumulation of fluid in the tissues usually begins when the level of serum protein falls below 5 Gm. per hundred cubic centimeters. This so-called edema level is subject, however, to variation, depending on the relative proportions of albumin and globulin.

Generalized edema of the tissues sometimes appears as an annoying complication following ordinary surgical procedures. The explanation has never appeared to be quite as simple as it seems to have become in the classic types of nephrosis. Surgical investigators have pointed out that the lowering of the serum protein and of the serum albumin is of importance in tending to make fluid accumulate in the tissues, but edema can readily occur in the presence of normal values. The latest researches of Jones, Eaton and White [2] at the Massachusetts General Hospital in Boston represent an effort to examine some of the heretofore little understood possibilities experimentally; notably to develop postoperative edema. For this purpose they have attempted to reproduce in animals the actual condition occurring in ordinary surgical procedures on human beings, particularly as related to abdominal surgery. In these experiments they have tried to control and study general nutrition from the point of view of caloric requirements; the intake of nitrogen, sodium chloride and water, respectively; the absorption of nutritive material from the gastro-intestinal tract; serous drainage; abscess formation, and, to a certain extent, surgical shock following general anesthesia and an abdominal operation. Factors that seemed to be

1. Rudansky, M.: Introduction to Physiological Chemistry, New York, John Wiley and Sons, Inc., 1934.
2. Jones, C. M.; Eaton, F. B., and White, J. C.: Experimental Postoperative Edema, Arch. Int. Med. **53**: 649 (May) 1934.

secondary to those listed and that were beyond control were those related to hepatic and renal insufficiency. The factors that were approximately under control were those frequently encountered in operative conditions, particularly in those involving operations on the gastro-intestinal tract.

The factor of undernutrition, and particularly of protein starvation, was found to be of fundamental importance, as was anticipated. In numerous instances, peripheral edema and visceral edema of marked degree occurred in the presence of normal values for serum protein and albumin. Again, the serum protein depletion was not always sufficient to precipitate the edematous condition. An adequate fluid intake also was always essential. As the Boston investigators remark, when the lack of nitrogen was acute, water tended to accumulate in the tissues more rapidly, provided the fluid intake was considerable.

The importance of serous drainage as a factor in producing edema after operations is strongly suggested by these studies. Jones and his collaborators admit the improbability that the actual loss of protein occasioned by drainage of any of the fluids would in itself seriously alter the serum protein content under normal conditions. In association with marked undernutrition and the administration of moderately large amounts of fluid and salt, it is entirely possible that such a loss of protein may be of real importance in the production of edema, probably through a lowering of the serum protein. Sepsis appears to be of great moment. It is possible, according to the Boston investigators, that there is a constant general reaction of the body to histamine or histamine-like substances in the presence of abscess formations, with resulting increased capillary permeability. Under such conditions, lack of nitrogen and a somewhat excessive fluid intake might result in a striking accumulation of fluid in the tissues.

One striking feature of the experiments was the edema noted in various important viscera. Sometimes there was an involvement of the heart, intestine, pancreas and kidneys, leading one to wonder whether such changes may not so alter the functions of these organs as to interfere seriously with homeostasis. Under such conditions the circulatory, urinary, hepatic and digestive systems, for example, may all be somewhat disturbed and, from a lack of correct individual functioning, may fail to coordinate properly among themselves. The diarrhea that occurred in several of the animals, for example, appeared always to be a concomitant of edema of the intestinal tract. With diarrhea, all the nutritional processes were manifestly upset and a vicious circle was at once established. From the standpoint of the clinical application of these observations, the Boston investigators believe, one can readily conceive of the difficulties that may face the depleted preoperative patient when subjected to any major surgical procedure that necessarily involves further depletion, surgical shock, hypodermoclyses and possible surgical drainage. Obviously, they conclude, measures tending to maintain nutrition must be instituted, and the dangers of flooding the patient with excessive amounts of water and salt must be minimized as much as possible.

Current Comment

THE INDEX NUMBER

This issue of THE JOURNAL contains the index covering the numbers from January through June. Because of the length of the index and the vast amount of material included in this period, it is necessary to omit from this issue some of the departments that are usually included. It is, moreover, impossible, because of the limitations on our space, to make adequate comment on some of the important actions taken by the House of Delegates of the American Medical Association at the annual session. It is proposed, however, to call specific attention in forthcoming issues to many of these important actions and to emphasize particularly economic problems which the House of Delegates feels should be brought prominently to the attention of the profession.

AMIDOPYRINE AND GRANULOCYTOPENIA

Elsewhere in this issue appears a statement prepared for the Council on Pharmacy and Chemistry by Dr. Paul Reznikoff on the relation of amidopyrine and the barbituric acid derivatives to granulocytopenia. In sponsoring this statement the Council also appended an informative comment. Apparently amidopyrine may cause granulocytopenia to occur in certain patients but there is no definite evidence that barbital compounds alone are responsible. On the contrary, it appears from the evidence available that barbitals have little or nothing to do with the occurrence of this condition. Considering the amounts of amidopyrine that have been used, relatively few cases of agranulocytosis have developed. Presumably, therefore, the occurrence of this condition in a patient using amidopyrine indicates an unusual degree of sensitivity to the drug. Amidopyrine is marketed not only in combination with other drugs such as the barbital derivatives but also with antipyretics such as acetphenetidin and acetylsalicylic acid, and with other drugs. Unfortunately, many of the drug firms do not name the products in such a manner as would indicate readily the presence of amidopyrine. Furthermore, there are a number of nostrums sold directly to the public which contain amidopyrine. The Council points out that this incidence of agranulocytosis as a result of the administration of amidopyrine serves to show the advisability of the rule of the Council on Pharmacy and Chemistry which provides against the recognition of proprietary uninformative names for well known pharmacopeial substances or for mixtures of well known drugs. It seems probable that drugs other than amidopyrine will be found also to cause granulocytopenia.

PROCEEDINGS OF THE CLEVELAND SESSION

MINUTES OF THE EIGHTY-FIFTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT CLEVELAND, JUNE 11-15, 1934

(Continued from page 2119)

Second Meeting—Tuesday Morning, June 12

The House of Delegates was called to order at 9:30 a. m. by the Speaker, Dr. F. C. Warnshuis.

It was moved by Dr. J. D. Brook, Michigan, seconded by Dr. Mather Pfeiffenberger, Illinois, and carried, that the signed attendance slips constitute the roll call of the House.

On motion of Dr. Charles H. Goodrich, New York, seconded by Dr. Grant C. Madill, New York, and carried, the House dispensed with the reading of the minutes.

Report of the Reference Committee on Credentials

Dr. J. D. Brook, Chairman, reported that sixty-two additional delegates had filed proper credentials with the committee, making a total registration of 164.

There being no objections, the Speaker stated that the report of the committee would be received.

Report of the Reference Committee on Reports of Officers

Dr. J. Gurney Taylor, Chairman, presented the following report:

1. Speaker's Address: Your committee approves the recommendation relative to suitable comments being added to committee reports, especially when they may relate to major policies.

Your committee feels that it is not desirable to abolish the Reference Committee on Rules and Order of Business, since occasions may yet arise when the necessity of such a committee will be apparent.

Your committee further recommends that amendments be not adopted to create a Reference Committee on Medical Economics. We believe the problems relative to Medical Economics should be referred to the Reference Committee on Legislation and Public Relations. Believing that this subject comes under the jurisdiction of this committee, we find no authority in the Constitution and By-Laws relative to the creation of a committee on economics.

Your committee does not recommend the appointment of a nominating committee, feeling that the present system has been adequate and has been acceptable to the Fellowship.

2. President's Address: Your committee endorses the many sane and practical general suggestions offered in the message of the President, especially those relative to the postgraduate extension work. We suggest that the Council on Medical Education and Hospitals consider the feasibility of assisting and encouraging the state medical societies in the establishment of postgraduate courses of instruction.

Relative to the method of procedure regarding expert medical testimony, it is suggested that each state medical society establish cooperation with its state bar association in an effort to correct this abuse.

3. President-Elect's Address: Your committee wishes to commend particularly that paragraph of the address of the President-Elect in which he said "It is sad to relate that mighty forces have been at work to sow the seeds of discontent in the ranks of organized medicine and to destroy the faith in that leadership which is based on the sacred traditions of sacrifice and devotion to the idealism of medical service." In times like these, loyalty to the organization and sacrifice of individual prestige to the good of all are necessary for medical advancement.

4. Report of the Judicial Council: Your committee believes that this report contains much material for serious thought and would emphasize the importance and appreciation of local responsibility by the membership, believing that the prosecution should originate in the local county societies.

Respectfully submitted.

J. Gurney Taylor, Chairman.
W. G. Ricker.
Wells Teachnor Sr.
J. R. Bloss.
W. D. Johnson.

On motion of Dr. Taylor, seconded by Dr. Joseph F. Smith, Wisconsin, and carried, the report of the Reference Committee on Reports of Officers was adopted.

Report of the Reference Committee on Legislation and Public Relations

Dr. Charles E. Mongan, Chairman, presented the following report:

1. Your committee heartily approves of the excellent work done by the Bureau of Legal Medicine and Legislation in the matter of N I R A legislation and urges the Bureau to continue to watch the development of codes likely to affect the practice of medicine, and especially to endeavor to protect the physician engaged in the practice of roentgenology.

2. Federal Emergency Relief Administration: Your committee commends the interventions of the Bureau in the development of emergency medical relief service and approves of its acts; your committee recommends that the proper agency of the American Medical Association make an early survey of conditions existing at this time with a view to correcting discrepancies in the service and making possible improvements.

3. Your committee would point to the fact that the freedom of choice of physician has been preserved in this service and that for the first time the fact that only the medical profession may properly evaluate medical service has been recognized.

4. Federal Civil Works Administration: This report is historical. The only phase of this service of interest now is the delay in adjustment of claims of physicians for services rendered. This delay is due largely to the need of correction of errors in the reports of physicians who rendered the service. The Bureau should continue in touch with the situation and facilitate the proceedings as much as possible.

5. Hospitalization of Veterans: This report reiterates and presents in compact form the oft repeated position of the American Medical Association on this subject and recommends that it be approved as such.

6. Contract Surgeons of the Spanish-American War: In the light of the report, the contract surgeons of the Spanish-American War deserve special consideration. There is no reason why they should not be given the same treatment as others who rendered the same or similar service, particularly the contract nurses.

7. Library of the Surgeon-General's Office: Your committee approves the observations made in the report and joins in the recommendation that the profession unite in an effort to preserve and protect this institution.

8. Food, Drug and Cosmetic Legislation: The bureaus of the American Medical Association are evidently in close touch with this matter. The position of the Association on the subject is well known and should be reiterated and emphasized. It is well to add to the activities of the Association in this connection the subject of cosmetics and "truth in advertising."

9. Report of Committee on Legislative Activities: Your committee commends the Committee on Legislative Activities for its judgment and acts, particularly with reference to the question of veterans' legislation. Your committee would impress on the several state societies the necessity of educating the public on the science of medicine and the public welfare. Each member of the House of Delegates should feel it his bounded duty to impress on his state society and county societies the importance of individual efforts in this direction.

10. Resolutions on State and Federal Relief Committees: Your committee recommends the adoption of the resolutions, with the observation that not only state relief commissions but county administrations as well should have physicians in their personnel.

11. Resolution on Free Choice of Physician: Your committee finds that the matter referred to is covered by a federal statute (enacted in 1916) and not by rules and regulations. Your committee recommends that this resolution be referred to the Board of Trustees for further consideration and suitable action.

12. Resolutions on Discrimination Against Certain Members of the Medical Profession: The matter was fully covered by the resolution adopted by this House in 1933 as follows:

Resolved, That the American Medical Association in annual session assembled, condemns the persecution of any individual on account of race or religion, by any state or under any flag.

13. Resolutions introduced by Dr. Holman Taylor, Texas, with reference to support of the Army Medical Library: The Reference Committee approves the resolutions and recommends their adoption.

Respectfully submitted. CHARLES E. MONGAN, Chairman.
GRANT C. MADILL.
C. W. WAGGONER.
HOLMAN TAYLOR.
JOSEPH F. SMITH.

On motions, duly seconded and carried, each section of the report of the Reference Committee on Legislation and Public Relations was adopted, after which the report was adopted as a whole on motion of Dr. Mongan, seconded by Dr. Mather Pfeiffenberger, Illinois, and carried.

Report of the Reference Committee on Sections and Section Work

Dr. Isaac A. Abt, Section on Pediatrics, presented the following report:

Your committee wishes to commend the sentiment expressed concerning the activities and worth of Dr. John E. Lane. The House of Delegates recognizes his long and distinguished service in the House and as a member of the council on Scientific Assembly.

Your committee wishes to approve the program initiated this year of holding General Scientific Meetings on Monday and Tuesday of each annual session.

Your committee also approves the setting aside of one session of the Section on Miscellaneous Topics to consideration of a program on Forensic Medicine, as well as a session of the same section for discussion of the subject of Nutrition.

Your committee recommends the adoption of the resolution of Dr. Albert Soiland and suggests that the House of Delegates authorize the Section on Radiology cordially to invite the fifth international congress to be held in America, at such time and place as may be decided on by the International Committee of the Fifth Congress of Radiology.

Finally, your committee desires to commend the Council on Scientific Assembly for its splendid work during the past year, which expresses itself in the excellent scientific program to be presented at this meeting of the Association.

Respectfully submitted. ISAAC A. ABT, Chairman.
A. R. MCCOMAS.
C. W. ROBERTS.
W. H. SEEMANN.

On motion of Dr. Abt, seconded by Dr. J. Gurney Taylor, Wisconsin, and carried, the report was adopted.

Report of Reference Committee on Medical Education

Dr. Irvin Abell, Chairman, presented the following report:

1. The Reference Committee on Medical Education has considered the report of the Council on Medical Education and Hospitals, as published in the Handbook, and heartily commends it in its entirety.

Paragraphs 1 and 16, dealing with Americans studying in countries other than North America, are particularly worthy of attention in view of the great number desiring to enter the field of medicine. Paragraph 5 shows an astonishing ratio of college students to the whole population, it being in the United States 1 to 125, and varying in foreign countries from 1 to 455 to 1 to 1,150. Obviously, this is an economic situation about which this organization can do nothing further than to make the facts known.

Paragraphs 4 and 17 indicate the great activity of the Council in that 755 hospitals were visited by its staff during the year and that there were 200 smaller hospitals to which the staff of the Council has been able to bring considerable assistance by giving suggestions regarding organization and operation.

The conclusion of the Council, expressed in paragraph 8, that it would be undesirable to abolish examinations by state boards and substitute therefor a diploma is commended. Your committee would urge all candidates for licensure to take the examinations of the National Board, since its certificate is recognized by the majority of the state licensing boards.

Publications referred to in paragraphs 11, 12 and 13 comprise an enormous amount of important data of incomparable value to the profession and furnish the record of a most worthwhile work of the Council.

Paragraph 14 refers to a comprehensive survey of medical education now being undertaken. The report of this activity will be awaited with great interest because of the number of years that have passed and of the great changes that have occurred in educational procedures since the last survey.

It is interesting to note in paragraph 19 that the general hospitals show an average of 155,000 unoccupied beds and that the special hospitals had an average of 61,754 unoccupied beds in 1933. This is forceful testimony of the effects of the depression as well as of excessive hospital facilities.

2. Supplement A of the Council, which formulates essentials for an approved special examining board, is recommended for adoption with the suggestion that definition of special fields be made more elastic, so that, for instance, one contemplating specialization in obstetrics would not be required to take the examination in gynecology also, and vice versa; further, that one desiring to specialize in gynecology and abdominal surgery could apply for examination in such fields without, as under the proposed set up, also being required to take the examination in general surgery and obstetrics. The field of internal medicine could be subdivided so as to cover those who restrict their activities to one of its integral parts.

3. The resolution introduced by Dr. G. H. Mundt, delegate from the Illinois State Medical Association, specifying that the staffs of hospitals designated for intern training should comprise only members in good standing in their local county medical societies, is referred to the Council on Medical Education and Hospitals with the following comment:

Your committee approves the principle of this resolution but feels that its general application at the present time is inadvisable. Paragraph 3 of the report of the Council indicates that approximately 87 per cent of the staffs of the 6,437 hospitals of the country are members of the American Medical Association.

4. The resolutions introduced by Dr. George M. Fisher, delegate from the Medical Society of the State of New York, referring to the restriction of x-ray practice, both diagnostic and therapeutic, to the direct supervision and control of duly licensed physicians or dentists, are approved.

5. The resolutions introduced by Dr. E. P. North, delegate from the Missouri State Medical Association, requesting that the American Medical Association shall not approve any institution for any purpose unless and until such institution shall be

officially in the approved list of component medical society or societies in the jurisdiction of which such hospital or institution is located or operates are disapproved.

6. The resolution introduced by Dr. C. B. Reed, delegate from the Illinois State Medical Society, requesting establishment of standards, ratings and inspections of training schools in physical therapy, is covered in the report of the Board of Trustees, page 49, as follows:

"The Council on Medical Education and Hospitals is cooperating with the Council on Physical Therapy in formulating essentials for Physical Therapy and Occupational Therapy Schools."

7. The resolutions introduced by Dr. Holman Taylor, delegate from the State Medical Association of Texas, providing that the American Medical Association respectfully request of proper authorities the setting aside of an adequate sum for the construction of a new building to house the Army Medical Library and the Army Medical Museum, are approved.

8. The resolutions introduced by Dr. B. R. Shurly, delegate from the Section on Laryngology, Otology and Rhinology, regarding qualifications and standards for hospital inspection and the supply of these to all state, county and city government officials, are fully covered by publications of the Council and such information is available on request made to the headquarters office of the American Medical Association in Chicago.

Respectfully submitted.

IRVIN ABELL, Chairman.
J. W. AMESSE.
FRED MOORE.
J. F. HAGERTY.
W. A. COOK.

On motions, duly seconded and carried, the first two sections of the report were adopted.

Dr. Abell moved that section 3 of the report referring to the resolution introduced by Dr. G. Henry Mundt, Illinois, be adopted. The motion was seconded by Dr. William H. Ross, New York.

Dr. G. Henry Mundt, Illinois, moved as a substitute motion that the resolution as introduced by him be adopted. The substitute motion was seconded and carried, after discussion by Drs. R. W. Fouts, Nebraska; John F. Hagerty, New Jersey; B. F. Bailey, Nebraska; James E. Paullin Jr., Section on Practice of Medicine; Irvin Abell, Kentucky; William F. Bowen, Kansas; C. S. Gorsline, Michigan; W. E. Bannen, Wisconsin; Virgil E. Simpson, Kentucky; Charles B. Wright, Trustee; Mather Pfeiffenberger, Illinois; E. H. Cary, Texas; Leonce J. Kosminsky, Arkansas, and Horace Reed, Oklahoma.

On motions, duly seconded and carried, sections 4, 5, 6, 7 and 8 of the report were adopted.

Dr. Abell moved that the report be adopted as a whole with the exception of the third section, which was amended by the adoption of the resolution as introduced by Dr. Mundt. The motion was seconded by Dr. Joseph F. Smith, Wisconsin, and carried.

Report of the Reference Committee on Miscellaneous Business

Dr. H. B. Everett, Chairman, presented a report of the Reference Committee on Miscellaneous Business and moved its adoption. On motion made by Dr. Charles H. Goodrich, New York, and seconded by Dr. Samuel P. Mengel, Pennsylvania, the matter was referred back to the committee.

Report of the Reference Committee on Amendments to the Constitution and By-Laws

Dr. H. H. Shoulders, Chairman, presented the following report:

Three amendments to the Principles of Medical Ethics were referred to your committee for consideration. They were all prepared by the Judicial Council and introduced by the Chairman, Dr. G. E. Follansbee, who came before the committee to give valid reasons for the adoption of each of these amendments.

Your committee finds that the amendments do not add any new principles. They all serve the purpose of facilitating the interpretation of the principles by the membership at large.

Your committee cannot describe these amendments in language more brief than the amendments themselves.

Your committee recommends the adoption of the amendments.

Respectfully submitted.

H. H. SHOULDERS, Chairman.
J. N. HUNSBERGER.
H. C. MACATEE.
E. A. HINES.
R. L. SENSENICH.

On motions of Dr. Shoulders, duly seconded and carried, the report of the committee recommending the adoption of each amendment was adopted, and on separate motions, duly seconded and carried, the sections of the Principles of Medical Ethics were amended in accordance with the report.

Report of the Reference Committee on Reports of Board of Trustees and Secretary

Dr. W. F. Braasch, Chairman, presented the following report:

1. Report of Secretary: Your committee notes with much satisfaction that there has been a very small net loss of Fellows enrolled in the American Medical Association for this year. That this loss should be so small in spite of the continued financial difficulties which have seriously affected the medical profession during the past year shows beyond any doubt the great desire of the bulk of the profession to support organized medicine. This fact might be used by secretaries of state and county medical associations as a stimulus to their efforts to increase membership.

Your committee endorses the comments of the Secretary on the value of militant, active county societies in our organization. It should be emphasized that the county society is the backbone of medical organization and medical stability.

We note a growing tendency on the part of the leaders of the medical profession to take a more active part in the affairs of organized medicine. The strength of the state, as well as the county society, depends largely on active participation by its leaders.

Your reference committee wishes to express its commendation of the earnest and sincere work of the Secretary and of the devotion rendered by him to this position in the service of medicine.

2. Your committee believes that the Board of Trustees is to be congratulated on its excellent financial report in spite of present unfavorable economic conditions and the various readjustments that were found necessary in the number and the remuneration of its employees. It is of interest to note that the net profit for the year was approximately only $5,000 and that the total income was but little less than last year.

THE JOURNAL: In keeping with the action taken in all previous years, your committee commends the high character and the valuable influence that the Association maintains under the able management of its present editor. Your committee is glad to note that the recent editorial policies have deviated somewhat from those of the past in that suggestions previously made by the House of Delegates have been followed to an increasing extent during the past year, in regard to devoting more attention to matters of economic interest. It seems to your committee that the high standard of THE JOURNAL has in no way suffered as a result of such action.

While we agree that the main object of THE JOURNAL is in the field of medical science, nevertheless economic problems of fundamental importance are constantly arising which should be discussed and analyzed so that the medical profession might be given at least an abstract of current developments. Your committee believes that this field merits more attention in the columns of THE JOURNAL and that such articles should be displayed so as to be easily assimilated by the general profession.

Your reference committee wishes to call attention particularly to the foreign correspondence in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, a feature that is unique, since there is no other medical publication in the world which maintains similar correspondents in all the leading nations of the world. This service has been of great value in keeping the American medical profession informed accurately of official and economic changes in other countries.

3. Special Journals: Your committee had noted with apprehension in previous years the constantly mounting cost of the special journals. Your committee is glad to note that the cost of publication of the special journals exceeded the income by only approximately $10,000, which represented a marked decrease in the loss sustained in preceding years. The saving in the cost of the special articles has been brought about by more careful selection of illustrations and by closer scientific scrutiny on the part of the editorial boards of material submitted for publication.

Your committee notes with satisfaction that the loss incurred in the publication of HYGEIA amounted to only $30,000. The indirect good done to the profession by this publication may not be generally appreciated, but it is worthy of our most active support. It is of interest to note that only 14,000 physicians in the United States were subscribers to HYGEIA last year. A plea should be made that every physician subscribe to at least one copy, which might be found in his waiting room if not in his library.

4. QUARTERLY CUMULATIVE INDEX MEDICUS: Your committee recommends the continued publication of the QUARTERLY CUMULATIVE INDEX MEDICUS and is well aware of the good it is doing. In view of the fact, however, that it is being consulted by so many varied interests other than those strictly related to the profession, one wonders whether the cost of its publication might not be shared by other agencies. Furthermore, we hope that the loss incurred in its publication, which was approximately $44,000 in the past year, may in some way be lessened in the future. Such a publication for the advancement of scientific medicine might well be considered worthy of endowment by those interested in furthering medical progress.

5. Council on Pharmacy and Chemistry: Your committee heartily endorses the ever increasing efficiency and importance of the work done by the Council on Pharmacy and Chemistry, as well as that of the chemical laboratory. We fear that many members of the Association fail to appreciate the important bearing this work has on the progress of the medical profession. We believe that this work should receive continued and unstinted support.

In view of the current economic stress, your reference committee suggests the possibility of a joint study by the Council on Pharmacy and Chemistry and the Bureau of Medical Economics of the costs of proprietary and other remedies employed by the medical profession in the diagnosis and treatment of disease. In many instances the exorbitant price has been a serious burden on the patient.

6. Council on Physical Therapy: Your committee wishes to commend the splendid work done by the Council on Physical Therapy. We are impressed with the care and thoroughness of its investigations and the good it is doing. The Council has been of great help to the medical profession in preventing the exploitation of physical methods and of apparatus that are of doubtful value. Its efforts to educate the profession by means of exhibits and demonstrations, as well as in regulating and controlling manufacturers, are of fundamental importance and deserve great praise. It is to be hoped that the state associations will take full advantage of the various opportunities offered by the Council to augment our knowledge of physical therapy.

Your reference committee would also recommend increased attention by the Council to the problems in physical therapy arising in the practice of the physician.

7. Bureau of Exhibits: The development of scientific exhibits in recent years has been one of the most interesting phases of medical progress. Its educational value is being appreciated by the general profession. As a result of the stimulus given by scientific exhibits at the Association meetings, similar exhibits have been developed at the meetings of several state associations. In many of the sections the Scientific Exhibit has come to be regarded as the pivotal feature of the program, the papers read being more or less of an explanatory and supporting nature.

The Bureau also deserves much praise for the excellent exhibit shown at the Century of Progress exposition in Chicago.

Your reference committee wishes to suggest to the House of Delegates that it express its appreciation to Dr. D. Chester Brown, retiring member of the Board of Trustees, who has been for many years chairman of the Committee on Scientific Exhibit.

8. Committee on Foods: Too much praise cannot be given for the development of the work of the Committee on Foods. Its importance is being widely recognized and its recommendations are being adopted not alone by members of the Association but by the public. Its value as a protection to public health is generally realized and it is rapidly becoming one of the more important activities of the Association. We note with interest its rapid growth and extension into associated fields, as described in the report.

This is one of the necessary functions performed by the American Medical Association until the public generally and the government shall recognize the necessity for such a service on a public basis and assume this liability by legislative enactment.

9. Radio Broadcasting: The far reaching influence of radio broadcasting on medical subjects on public thought is worthy of continued commendation and unlimited support. The pity is, however, that the radio activity on matters of public health and of sickness is not all under the control of the Association.

Your committee wishes to express the appreciation of the American Medical Association to the radio broadcasting chains for offering their facilities and expresses the hope that they will continue to afford such facilities to the Association in the future. At the same time your committee would condemn the increased broadcasting of unestablished remedies directly to the public and urge further activities on the part of the Board of Trustees leading to some type of control over this evil.

10. Field Secretary: Attention has been repeatedly called by the House of Delegates to the desirability of bringing the central organization of the Association in closer contact with the various activities of the constituent societies. Committees of previous years believed that closer cooperation between the state societies and representatives from the Association headquarters would be of mutual benefit. At the meeting of last year your committee asked that the Board of Trustees consider the advisability of appointing a field secretary.

Your committee appreciates that the decision of the Board of Trustees to the effect that it would be inadvisable to take final action in the appointment of a field secretary at the present time is based on careful consideration.

However, these suggestions have resulted in bringing about a much more intimate relationship between the officers of the Association and the constituent state organizations than had previously existed and, as a result, has added to the loyalty and interest of the profession in the work of the Association.

Your committee notes and approves the fact that officers of the Association and the directors of the different bureaus have extended the work to county and state societies and other organizations, making a total of 500 addresses during the past year.

Although many of the state associations have developed into strong, active organizations, nevertheless there are some state societies that are comparatively inadequately organized. In confirmation, one reads in the report of the Bureau of Legal Medicine and Legislation of this year that in an increasing number of states the cults have scored heavily during the year 1933.

In the opinion of many delegates, particularly those representing some of the smaller and more sparsely settled states, even further support from the Association headquarters would be desirable.

The possibility suggests itself of sending some representative of the central office who has had experience in the ways and means of certain fields, such as legislative activities for example, to study the problems involved and give such counsel as may be indicated.

Another method suggests itself whereby the activities of the Association headquarters might be brought in closer contact with the constituent societies. Many of the members of the House of Delegates have expressed the desire of more active and continued contact with the central office. With the adjournment of the House, official relationship of the Delegates to the Association practically ceases. While it is realized that the obstacles in the way of calling an interim session are many, nevertheless in many quarters the desirability of so doing,

particularly in times of danger or of stress, has been expressed. It is true that monthly bulletins issued in recent years have helped to give us some information concerning current problems. Nevertheless, some means whereby the members of the House of Delegates might be kept in closer touch with the activities and the policies of the Association headquarters would be of great value.

Your committee would therefore suggest to the Board of Trustees the advisability of maintaining an informational service on social, medical and economic subjects to be sent monthly as a bulletin to members of the House of Delegates, the committee in charge of the bulletin to include the Chairman of the Board of Trustees, the Secretary of the Association, the Editor of THE JOURNAL, the Speaker of the House of Delegates, and the directors of the Bureau of Legal Medical Legislation and the Bureau of Medical Economics, this bulletin to be sent monthly to all members of the House of Delegates and alternates regularly certified by the state medical societies.

Respectfully submitted.

W. F. BRAASCH, Chairman.
A. J. BEDELL.
S. P. MENGEL.
C. J. WHALEN.
J. B. HARRIS.

On motions of Dr. Braasch, duly seconded and carried, each of the ten sections of the report was adopted.

An amendment to the tenth section of the report that the representatives of the sections be included with the delegates from states was adopted on motion of Dr. Arthur J. Bedell, New York, seconded by Dr. Charles J. Whalen, Illinois, and carried.

The report was adopted as a whole, on motion of Dr. Braasch, seconded by Dr. Mather Pfeiffenberger, Illinois, and carried.

Report of the Judicial Council

Dr. George Edward Follansbee, Chairman, presented the following report:

A resolution introduced by Dr. Charles J. Whalen, Illinois, calls attention to a recent action by the Medical Service Board of the American College of Surgeons approved by its Board of Regents, advocating and publicizing a procedure for furnishing medical and hospital care for certain classes of the population. No consideration appears to have been given to policies or procedure previously adopted by the American Medical Association, of which the Board of Regents are members. The American Medical Association is the one organization representing the entire body of physicians constituting the medical profession and by virtue of that fact is the only organization qualified to speak for the varying interests and ideas of the profession as a whole.

Recurring proposals concerning the entire practice of medicine from small sections of the profession without due regard to the policies of the entire profession as represented by the American Medical Association when presented to the public through other channels than the representative body are confusing to the public mind, are harmful to the profession and give aid and assistance to those bodies and individuals attempting to revolutionize medical practice.

The Judicial Council therefore recommends the adoption of the resolution as follows:

WHEREAS, The American Medical Association, including 100,000 physicians, is the only democratic body representing the organized profession of this country through delegates regularly elected through county and state medical societies; and

WHEREAS, Other medical organizations and groups, representing selected groups of specialists, have from time to time issued pronouncements of policies in the field of medical economics and medical practice, which do not represent the views of organized medicine and which purport to guide the medical profession and the public in the administration of medical affairs; and

WHEREAS, The House of Delegates of the American Medical Association has repeatedly condemned the issuing of such announcements and policies, which seriously embarrass the attempts of this organization to secure adequate care for the health of the American people and to protect the ideals of the medical profession; and

WHEREAS, The Board of Regents of the American College of Surgeons, assembled in Chicago on Sunday, June 10, promulgated a policy including a prepayment plan for medical care, restricted to so-called "approved hospitals" to members of the staffs of such hospitals, and to physicians acceptable to such staffs; and

WHEREAS, This action of the Board of Regents of the American College of Surgeons has been spread to the people of the United States through the public press on the opening day of the annual session of this House of Delegates; therefore, be it

Resolved, That the House of Delegates of the American Medical Association express its condemnation of such tactics and of this apparent attempt of the Board of Regents of the American College of Surgeons to dominate and control the nature of medical practice; and be it further

Resolved, That the House of Delegates request the Board of Trustees of the American Medical Association and the Judicial Council to ask the Board of Regents of the American College of Surgeons, who are themselves members of the American Medical Association, to explain the reasons for their action and to justify the attempt by this small group within a specialistic organization to legislate for all the medical profession of this country, truly represented only by the American Medical Association.

The report of the Judicial Council was adopted on motion of Dr. C. E. Humiston, Illinois, seconded by Dr. Albert Soiland, Section on Radiology, and carried unanimously.

Report of Reference Committee on Medical Economics

Dr. Frederic E. Sondern, Chairman, presented the following report:

1. Relative to the preamble and resolutions from the Section on Radiology, to wit:

WHEREAS, It has been reported to the officers and members of the Section on Radiology of the American Medical Association that an intolerable condition exists between certain otherwise acceptable hospitals and their departments of radiology; and

WHEREAS, It is known that in several such hospitals the business management does the collective bargaining for x-ray business with staff members and outsiders to the detriment and the professional and financial loss of their staff roentgenologists; and

WHEREAS, Such practice is not only unethical but places such hospitals on a direct competitive medical practice basis with their respective roentgenologists, which practice has been declared illegal in several states; and

WHEREAS, The practice of roentgenology or radiology is *ipso facto* the practice of medicine and cannot be separated therefrom; be it therefore

Resolved, That the House of Delegates of the American Medical Association go on record as opposing the exploitation of members of their own body in the manner outlined; and be it further

Resolved, That the House of Delegates of the American Medical Association in session duly assembled orders this resolution to be referred to the Council on Medical Education and Hospitals for the study and formulation of plans tending to the abatement of these highly unprofessional and obnoxious evils.

Your committee considers the questions involved in these resolutions as being primarily ethical, rather than truly economic, and for this reason, while recognizing the evil, refrains from direct comment concerning them and recommends that the resolutions be referred to the Council on Medical Education and Hospitals for such action as its wisdom may indicate.

2. Relative to the preambles and resolution from the delegates from Indiana, to wit:

WHEREAS, The legislative program for consideration of the next Congress will no doubt include prospective measures of social insurance; and

WHEREAS, There are those who strongly favor including in this program the enactment of legislation creating some form of sickness insurance; and

WHEREAS, Ill advised legislation would harmfully affect the group of individuals to whom sickness insurance would be offered, as well as the medical profession who would be required to provide the service; and

WHEREAS, A review of the history of the creation of sickness insurance as recently reported by the Bureau of Medical Economics of the American Medical Association indicates that the establishment of sickness insurance in Europe has frequently been actuated by political motives or economic purposes, not giving full consideration of the best interests or wishes of the groups involved, and in no country have the labor unions led a demand for sickness insurance; and

WHEREAS, In the present period of readjustment of the relationship of employer and employee, under guidance of the state, the demands of those who will speak for the body of millions of organized labor will be an all important factor in determining the shape any such legislation will take; be it therefore

Resolved, That the Board of Trustees be requested to appoint a committee whose duty it shall be, at the proper time, to contact the leaders of organized labor, to learn the attitude of the group they represent, and in conference with them to present the medical factors involved.

Your committee realizes the importance of this resolution and would recommend that the Trustees be requested to contact at such time and in such manner as they deem proper with the leaders of those groups or bodies interested, to bring about a mutual understanding of their aims and desires not only from the point of view of the medical profession but also for the best interests of the patient with due regard to the basic beliefs and principles of medicine. It would likewise be well if the suitable committees of state societies would do the same.

3. Relative to the report of the Bureau of Medical Economics as printed in the Handbook on pages 50 to 60: Careful reading of this report convinces your committee of the efficient, thorough and unprejudiced manner in which it was made by the Bureau, and your committee begs that you will commend these efforts in no uncertain terms. Almost every subject in the scope of medical economics has had consideration and as much reliable information as possible has been collected for your instruction and guidance. The matter of sickness insurance, state medicine and what not, call it what you will, is the burning question of the hour in the minds of many medical men. So much so is this the case that many a physician who has lost practice as well as income from savings during the five year period of depression looks eagerly to this House of Delegates for relief from his burdens, thinking that the delayed solution of the matter is the reason for his prolonged hardship. While the results of the many investigations and conclusions of the Bureau are available to every physician in THE JOURNAL and in the BULLETIN of the Association, it is the opinion of your committee that this information should be more definitely impressed on every physician of this country, and your committee begs to suggest that you recommend this to the Trustees to be done in such ways as they deem best. While the Bureau endeavors to present each subject as fully as possible and to point out the reasons for various cautions, it has in no instance recommended a course of procedure. In consequence, your committee has no recommendation but feels called on to express a warning that any effort on the part of organized medicine to solve these problems be predicated on the studies made or to be made by the Bureau. It is aptly stated, for example, that while many lay interests have continued their activities in medical economics there is also a marked increase in proposals by groups within the profession to modify the established form of medical practice with the grave query whether such temporary expedients will bring greater benefits than those represented by the existing social values in medicine, which might be destroyed thereby. The matter of health insurance has been the subject of intensive study by the Bureau and the preliminary report in the April issue of the Association BULLETIN is particularly commendable. Details concerning the conditions at the beginning of sickness insurance, the changes in institutions and objectives, the medical service, the physician in sickness insurance, and some general professional and social effects indicate the scope of the work and the information it conveys. This also should have the careful consideration of those who are giving thought to this matter. All said and done, sickness insurance was the product of the brain of the German chancellor Bismarck, just half a century ago. Why? Not that adequate medical care should be provided for all, but because industry required the standardization of expense to make more certain the exact cost of production, the better to meet keen world competition. Bismarck won, but who lost? The doctor, to be sure, but essentially the patient—study the figures published by your Bureau.

4. Relative to the report the Bureau of Legal Medicine and Legislation: Your committee has read with interest the references to economic subjects under such captions as National Industrial Recovery Act, Federal Emergency Relief Administration and Federal Civil Works Administration and begs you to realize that the profession has accepted, in view of the existing unparalleled economic situation, conditions of medical practice which should not and would not be tolerated under normal conditions.

5. Relative to the Report of the Judicial Council: Your committee would specially commend and invite your individual attention to that portion of the report dealing with medical economics on page 117 of the Handbook.

The statement is made that an organized and financial campaign for a socialized system of medical care to a large proportion of the population has crystallized into definite plans with the millions of certain foundations backing the effort. This is but one of several dangers to which attention is called in the report, which deserves your earnest study and every consideration.

The first section of the report was adopted on motion of Dr. Sondern, seconded by Dr. Grant C. Madill, and carried. An amendment offered by Dr. H. H. Shoulders, Tennessee, seconded by Dr. R. W. Fouts, Nebraska, that the matter be referred to the Judicial Council rather than to the Council on Medical Education and Hospitals, was lost.

The other four sections of the report were each adopted on motions of Dr. Sondern, duly seconded and carried.

On motion of Dr. Sondern, seconded by Dr. A. J. Scott Jr., California, and carried, the report was adopted as a whole.

The meeting recessed at 12 noon to reconvene at 2 p. m.

Tuesday Afternoon, June 12

The House of Delegates was called to order at 2:15 p. m. by the Speaker, Dr. F. C. Warnshuis.

Report of the Board of Trustees

Dr. J. H. J. Upham, Chairman, presented the following report:

1. At its meeting on Tuesday, the Board gave careful consideration to the resolution introduced by Dr. Joseph F. Smith, Wisconsin, relative to the composition of the Council on Physical Therapy. The Board would point out that in carrying on the work of that Council it has regularly maintained the original membership of the Council but has added thereto men to carry out special phases of the work, and that the Board will request the Council to pay increasing attention to the practical aspects of this work, adding to the membership of the Council accordingly.

2. Concerning the resolutions introduced by Dr. Clarence G. Toland, California: The Board is in intimate touch with plans already under way to make exhibits of importance in the Century of Progress permanent and will instruct the Bureau of Exhibits, which it has established, to give special consideration to the dissemination of such exhibit material within the limits of the funds available for the purpose.

3. Relative to the resolution introduced by Dr. Horace Reed, Oklahoma, in behalf of the Oklahoma delegation, concerning the perfecting of a plan for the handling of liability insurance: The Board has appointed a committee to investigate the feasibility of the Association's instituting such a plan and will give consideration to the matter at a subsequent meeting.

Section 1 of the report was adopted on motion of Dr. Grant C. Madill, New York, seconded by Dr. William H. Ross, New York, and carried.

Dr. Arthur J. Bedell, New York, moved that the second section of the report be adopted. The motion was seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried.

On motion of Dr. William H. Mayer, Pennsylvania, seconded by Dr. Arthur J. Bedell, New York, and carried, the third section of the report was adopted.

Report of the Reference Committee on Hygiene and Public Health

Dr. W. F. Draper, Chairman, presented the following report:

1. Your committee approves the report of the Bureau of Health and Public Instruction included in the report of the Board of Trustees.

2. Relative to the resolution introduced by Dr. George W. Kosmak, New York:

WHEREAS, It is now accepted that asphyxia plays a wider rôle than was formerly understood in death from other causes than mechanical suffocation; and

WHEREAS, The total toll of all asphyxial deaths is large; and

WHEREAS, It is known that many such deaths could be averted by prompt and proper use of modern measures and equipment for the relief of the element of asphyxia; and

WHEREAS, The Society for the Prevention of Asphyxial Death has been organized for the purpose of saving lives that would, without up-to-date management, be lost because of failure to relieve asphyxia; and

WHEREAS, That society has the approval of leaders in medical thought and administration; therefore be it

Resolved, That the Medical Society of the State of New York approves the aims and purposes of the Society for the Prevention of Asphyxial Death, and instructs the delegates to the House of Delegates of the American Medical Association to sponsor a similar resolution at the next meeting of the American Medical Association.

Your committee approves the principles embodied in the foregoing resolution and recommends that they be endorsed by the House of Delegates.

3. Relative to the resolution introduced by Dr. A. J. Scott Jr., California:

WHEREAS, The California Medical Association is informed that the American Medical Association, through one of its departments, favors the pasteurization of milk including certified raw milk; and

WHEREAS, The California Certified Milk Commissions has been embarrassed in this publication by the American Medical Association; and

WHEREAS, State organizations should receive complete support from the American Medical Association; and

WHEREAS, Certified raw milk as it is produced, handled and inspected in California, especially, is safe raw milk; now therefore be it

Resolved, That the House of Delegates of the American Medical Association in the session at Cleveland request that the proper department be instructed to take such measures as may be necessary to restore the confidence in the use of certified raw milk.

Your committee feels that the Board of Trustees may wish to refer this matter to the Committee on Foods, under whose jurisdiction it is believed that it would properly come.

4. The following resolutions (containing amendment to send copies also to broadcasting companies) were drafted by your committee to cover the resolutions introduced by Dr. C. S. Skaggs, Illinois, and Dr. Orrin S. Wightman, New York:

WHEREAS, The health of the citizens of the United States constitutes the greatest asset of the nation, and the responsibility of conserving the health of the citizens and restoring them to health in times of illness reposes in the medical profession; and

WHEREAS, This responsibility is very great, as is evidenced by the high educational and professional standards which physicians are required to meet in the various states of the Union before being permitted to diagnose disease and treat the sick; and

WHEREAS, Satisfactory and safe service of this type can only be rendered after a long and careful study of the causes and symptoms of disease, and that these causes and symptoms can only be determined after an interview with and physical examination of the patient; and

WHEREAS, No rational or safe treatment can be decided on and carried out under circumstances other than those above set forth without danger to the life or health of the patient; and

WHEREAS, For many months past the radio broadcasting companies of the United States have through their various broadcasting stations permitted the exploitation of many drugs, preparations, "patent medicines" and so-called cures, to the radio audiences of America; and

WHEREAS, It has been well established that some of the drugs, preparations and "patent medicines" so exploited are dangerous in the hands of the layman, others are of doubtful value, and in practically all instances their value for the relief of the symptoms and conditions for which recommended have been overstated and are misleading to the public, and

WHEREAS, The symptoms and conditions for which these drugs, preparations and "patent medicines" are recommended may be, and frequently are, indications of serious conditions calling for careful study on the part of a well qualified physician in order that a correct diagnosis may be made and the proper treatment instituted before the disease reaches an advanced stage; and

WHEREAS, Radio broadcasting is under the control of the Federal Radio Commission, and the radio is being used to broadcast nonsupportable claims and statements regarding a large number of drugs and preparations for the treatment of human ailments; therefore be it

Resolved, That the American Medical Association is opposed to the advertising, recommending or in any way exploiting over the radio any preparations, remedies, medicines or appliances for the treatment of human ailments; and that a copy of these resolutions be forwarded to the Federal Radio Commission with a request that in the interest of the health of the citizens of the United States they exercise their authority to discontinue such advertising over the radio. Be it

Resolved, That we favor a central national clearing bureau of the medical profession which shall act as a reference committee to confer and advise the broadcasting systems as to the propriety of accepting commercial programs advertising various proprietary and household remedies. Be it further

Resolved, That physicians use such influence with their cooperation in sending protests to the Federal Radio Commission and to broadcasting stations against misleading and unwarranted medical advertising. Be it further

Resolved, That copies of these resolutions be sent to all members of Congress and the United States Senate so that they shall be thoroughly informed of this menace to the health of our citizens, and that they be urged to pass necessary laws to eliminate these dangers.

Your committee approves these resolutions and recommends their adoption by the House of Delegates.

W. F. DRAPER, Chairman.
R. L. GREEN.
R. W. FOUTS.
E. F. CODY.
JOHN W. BURNS.

On motions of Dr. Draper, duly seconded and carried, the report was adopted section by section and as a whole.

NEW BUSINESS

Resolution Opposing Plan to Make a State Controlled Commodity of the Practice of Medicine

Dr. William H. Seemann, Louisiana, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, There is at present an attempt on the part of the board of administrators of the State Charity Hospital in the city of New Orleans to establish a $9,500,000 addition to this hospital with Federal PWA funds; and

WHEREAS, They propose to liquidate this debt partly by the sale of state medical services; therefore be it

Resolved, That this House of Delegates of the American Medical Association go on record as being opposed to any such plan that directly or indirectly makes a state controlled commodity of the practice of medicine.

Resolutions Authorizing Judicial Council to Make Investigations of Ethical Practices of Institutions

Dr. E. G. Wood, Tennessee, presented the following resolutions, which were referred to the Judicial Council:

"WHEREAS, The principles of the Code of Ethics of the American Medical Association enjoins on institutions and organizations to observe the same principles as individual practitioners; and

"WHEREAS, It is of the most vital importance to the public and to the medical profession that the principles of the Code of Ethics be observed by institutions, organizations and individuals; and

"WHEREAS, The Judicial Council of the American Medical Association has discretionary powers (conferred in chapter IX, section I of the By-Laws) to investigate practices in any community but is without the machinery and finances necessary for such investigations; therefore be it

"*Resolved*, That the Judicial Council be directed to exercise its discretionary powers to make investigations of ethical practices of institutions wherever in its opinion such investigations should be made. Be it further

"*Resolved*, That the Board of Trustees is requested to appropriate funds in such amounts as are necessary to enable the Judicial Council to set up and finance an organization for making such investigations, under rules and regulations prescribed by the Council. Be it further

"*Resolved*, That in the event an institution is found to be engaging in practices which are unethical, the authorities of the institution shall first be so advised and given a reasonable time in which to alter its practices, and in the event practices are not altered so as to conform to the Principles of the Code of Ethics, the approval of such an institution shall be stricken from the lists of approved institutions by the American Medical Association." The state and local medical societies of the state in which such an institution is located shall be notified by the Council of the action taken; also the action shall be published in the official publications of the American Medical Association.

Resolutions on Therapeutics in Diseases of Children

Dr. Arthur C. Morgan, Pennsylvania, on behalf of Dr. Isaac A. Abt, Section on Pediatrics, presented the following resolutions, which were referred to the Reference Committee on Hygiene and Public Health:

WHEREAS, Therapeutics in diseases of infants and children constitutes an important and much neglected phase of pediatric practice; and

WHEREAS, Those remedial agents prescribed by the profession, official in the United States Pharmacopeia X and National Formulary V are employed extensively in treating disease in infants and children; and

WHEREAS, The acceptance of new drugs and the deletion of remedies at present official in the Pharmacopeia and National Formulary concerns pediatricians as well as the general practitioner who treats infants and children; and

WHEREAS, There is a strong tendency to undermine official remedies, including those of pediatric importance and therapeutic usefulness, by

proprietary remedies through clever advertising, exploitation and salesmanship; therefore be it

Resolved, That the Philadelphia Pediatric Society take the initiative in urging the House of Delegates of the American Medical Association through its proper channels to suggest to the officers of the Pharmacopeial Convention 1930 and to the officers of the National Formulary Convention of 1930 the appointment of a representative group of pediatricians whose function shall be to suggest and advise those remedial agents (drugs and preparations of pediatric importance and therapeutic necessity) to be deleted, retained and added to both the Pharmacopeia and the National Formulary, who will cooperate with all present committees of the Pharmacopeia and National Formulary in furthering the work for revision. Be it further

Resolved, That the suggestion of average doses for the periods of infancy and of preschool and school ages be included in both texts as has been carried out previously with Pharmacopeial and National Formulary remedies in adults, and that application be filed with the Committee of Credentials of the Pharmacopeial Convention and the National Formulary for a permanent seat as delegates to the convention for 1940.

Resolution Requesting Appointment of Committee to Investigate Control of Patents on Devices

Dr. George Blumer, Connecticut, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The number of patents covering products and devices used in the practice of medicine for the prevention of disease and for the care of the public health has multiplied greatly in recent years; and

WHEREAS, These patents are being administered under various types of control by universities, foundations, institutions and special committees; and

WHEREAS, The Principles of Ethics of the American Medical Association indicate the desirability that all such patents shall be given freely for the benefit of the public; and

WHEREAS, Changing conditions indicate a desirability for the formulation of a proper system of control of such patents for the benefit of the medical profession and the public; therefore be it

Resolved, That the House of Delegates request the Board of Trustees to appoint a committee to make a comprehensive study of this situation and report to the House of Delegates the situation existing and suitable recommendations for a plan of control. Furthermore, that the Board of Trustees appropriate such funds as may be necessary to carry out such a study as promptly and as completely as possible because of the pressing character of the situation.

Resolutions Protesting Against Activities of Government Hospitals Beyond Purposes for Which They Were Created

Dr. Henry C. Macatee, District of Columbia, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, This House of Delegates at the session held in Milwaukee in 1933 endorsed in principle the Minority Report of the Committee on the Costs of Medical Care; and

WHEREAS, That report defined the extent to which the federal government should engage in the practice of medicine through its various categories of medical personnel; and

WHEREAS, The Medical Society of the District of Columbia, through its Committee on Medical Economics, has found that the medical employees of the United States government in the District of Columbia are required to render medical care in many cases and under many circumstances not contemplated by the law creating the medical agencies involved, such as the common practice of cabinet officers, senators, representatives and others high in official life to enter governmental hospitals and receive medical treatment without charge, at the expense of the taxpaying people of the United States; the admission to government hospitals for free hospitalization and free medical care of the domestic servants and other employees and their families, of individuals in public life and in active military and naval service; and the maintenance of dispensaries or so-called clinics in the capitol, the Senate and House office buildings, and in the following government departments and bureaus: Agriculture, Bureau of Engraving and Printing, Commerce, Interior, Justice, Labor, Navy, State, Treasury, War, and so on, the medical service rendered free in which dispensaries goes far beyond the requirements of first aid for which they were created; and

WHEREAS, The Medical Society of the District of Columbia, in common with the other residents of the national capital, has no means of making effective its protests against these unjust practices through the power of the franchise; therefore be it

Resolved, That the House of Delegates of the American Medical Association endorses in principle the report of the Medical Society of the District of Columbia on the subject of hospitals and dispensaries maintained by the United States government in the District of Columbia, and the protest of the said society against the extension of the activities of these agencies beyond the legitimate purposes for which they were created; and be it

Resolved, That the House of Delegates recommend that the constituent state associations take such action as may so influence their representatives in Congress that the taxpayers of the country may be relieved of the unjustified expenditure of public funds herein set forth, and that the protest of the medical profession of the District of Columbia may be supported by the voting strength of the national profession.

Resolution on the Recognition of Specialties for Certification by the American Medical Association

Dr. Descum C. McKenney, Section on Gastro-Enterology and Proctology, presented the following resolution, which was referred to the Reference Committee on Medical Education:

WHEREAS, The specialties of gastro-enterology and proctology are recognized by the American Medical Association by an active section of the Association; and

WHEREAS, Nearly 2,000 Fellows of the Association are limiting their practices to either proctology or gastro-enterology; and

WHEREAS, The primary thought behind the certification of specialties is the protection of the public against those who are setting themselves up as specialists in these specialties; and

WHEREAS, There should be an official and authentic check up and regulation of those Fellows who are practicing these specialties; and

WHEREAS, The omission of these two specialties from the list of specialties now recognized for certification by the Council on Medical Education and Hospitals will impede the efforts of ethical specialists in these fields of medicine in their battle against quacks, charlatans and irregulars who are holding themselves up as specialists; be it

Resolved, That the specialties of gastro-enterology and proctology as now recognized by the established section on these specialties be added to the list of specialties in medicine and surgery to be recognized for certification by the Council on Medical Education and Hospitals of the American Medical Association.

Resolution on Irregularities in Investigation and Prosecution of Sales of Impure Foods and Drugs

Dr. John F. Hagerty, New Jersey, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The Medical Society of New Jersey has learned of many irregularities in the investigation and prosecution of sales of impure foods and drugs; be it

Resolved, That the delegates to the American Medical Association be urged to bring this matter to the attention of the Association at its annual meeting, urging congressional investigations for the purpose of correcting these evils, which constitute a danger and menace to the public health.

Resolutions on the Crisis of Organized Medicine

Dr. John F. Hagerty, New Jersey, presented the following resolutions, which were referred to the Reference Committee on Medical Economics:

WHEREAS, The Medical Society of New Jersey, assembled at its one hundred and sixty-eighth annual meeting at Atlantic City, N. J., through its house of delegates has approved the recommendation contained in the annual address of the president, Dr. Frederic J. Quigley, relative to the crisis of organized medicine; and

WHEREAS, This society feels that unless the parent body of organized medicine, the American Medical Association, immediately assumes the leadership to meet the greatest threat that has ever been made to American medicine, to wit, the menace of control of medicine by the state; be it

Resolved, That the delegates representing the Medical Society of New Jersey in the House of Delegates of the American Medical Association, be directed to call attention of the House of Delegates to our concept concerning the imminent crisis now upon us; and be it further

Resolved, That our delegates be requested to use their best efforts to the end that a plan and scope to meet this emergency be forthwith promulgated through the channels of the American Medical Association.

Resolution on Contraceptive Devices and Methods

Dr. L. J. Hirschman, Michigan, for Dr. Arthur H. Curtis, Section on Obstetrics, Gynecology and Abdominal Surgery, presented the following resolution, which was referred to the Reference Committee on Hygiene and Public Health:

WHEREAS, Innumerable devices, chemical substances and technics are being promoted to the public for the purposes of contraception; and

WHEREAS, Members of the medical profession are constantly asked by the public to advise them relative to scientific efficacy of such materials and methods; therefore be it

Resolved, That the Board of Trustees of the American Medical Association request the Council on Pharmacy and Chemistry, Council on Physical Therapy, the Bureau of Investigation and a committee of five to be selected by the Section on Obstetrics, Gynecology and Abdominal Surgery to investigate the virtues and dangers of the various materials and methods and to publish its report, when complete, in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Resolution on Birth Control

Dr. William Ellingwood, Maine, presented the following resolution, which was referred to the Reference Committee on Hygiene and Public Health:

Resolved, By the House of Delegates of the Maine Medical Association, assembled in regular annual session at Bangor, Maine, on May 28, 1934:

First, that we approve the principle of birth control.

Second, that we aprove of Senate Bill 1842 and of House Bill 5978, now pending in the Congress of the United States; and that we would amend sections 211 and 245 of the U. S. Penal Code and sections 311 and 312 which affect the territories and districts of the United States by adding the following paragraph to each section:

"The provisions of this section shall not be construed to apply to any book or information relating to the prevention of conception, or article, instrument, substance, drug, medicine or thing designed, adapted or intended for the prevention of conception, for use

"1. By any physician legally licensed to practice medicine in any state, territory or the District of Columbia, or by his direction or prescription;

"2. By any medical college legally chartered under the laws of any state, territory or the District of Columbia;

"3. By any druggist in filling any prescription of a licensed physician;

"4. By any hospital or clinic licensed in any state, territory, or District of Columbia."

N. B.—Passage of the foregoing by our delegates means that our delegate to the A. M. A. meeting is instructed, by inference, to support similar legislation, when it comes before the national body.

Report of Council on Scientific Assembly

Dr. Olin West, Secretary, presented the following report:

The Council on Scientific Assembly at a meeting held on June 12, 1934, was favorably disposed toward a joint scientific meeting of the Canadian Medical Association and the American Medical Association.

The report of the Council was adopted on motion of Dr. Arthur C. Morgan, Pennsylvania, duly seconded and carried.

Resolution on Establishment of Standards, Ratings and Inspections of Training Schools in Physical Therapy

Dr. Olin West, Secretary, presented the following communication and resolution received by him from the American Physiotherapy Association, which were referred to the Reference Committee on Medical Education:

My dear Dr. West:

The enclosed resolution has been drawn up by a committee made up of representatives of the Council on Physical Therapy and of the American Physiotherapy Association. The Executive Committee of the American Physiotherapy Association urgently request that the resolution be presented to the House of Delegates at the annual meeting of the American Medical Association and that members be made fully acquainted with the purpose for its adoption.

Since the war, orthopedic surgeons have used the physiotherapy technician in large measure to aid in their reconstruction work. The organization of technicians has been striving to keep its standards high and we feel it is essential at this time that high educational standards be established.

The members of the American Physiotherapy Association, working only under supervision of the medical profession, wish to place the matter of training schools in the hands of the American Medical Association.

Copies of the resolution have been given to the two Chicago members of the House of Delegates, Dr. Reed and Dr. Humiston, who will give their support.

Thank you for your attention to this.

Very truly yours,

BESS B. SEARLS, Secretary,
AMERICAN PHYSIOTHERAPY ASSOCIATION.

WHEREAS, There is a recognized demand for qualified professionally trained physical therapy technicians in the hospitals, clinics, crippled children's schools and physicians' offices of this country; and

WHEREAS, The work of these technicians is under the direction of members of the medical profession; and

WHEREAS, The medical profession and the American Physiotherapy Association recognize the vital importance of establishing minimum standards of training and the inspection of training schools in physical therapy by a qualified and authoritative organization; therefore be it

Resolved, That the entire subject be left to the Board of Trustees of the American Medical Association, with the request that it be given careful study and consideration, and, if practical and feasible, some plan for the establishment of standards, ratings and inspections of training schools in physical therapy be effected, providing that the expense of such inspection be borne by the school requesting the same.

Executive Session—Tuesday Afternoon, June 12

The Speaker declared the House in executive session.

Report of Special Committee

Dr. Nathan B. Van Etten, Chairman, read the following report of the Special Committee appointed to consider the resolution submitted to the House of Delegates from the delegates of the state of Michigan and a statement of the Board of Trustees concerning Sickness Insurance in the United States:

The following resolution was submitted by delegates of the Michigan State Medical Society:

WHEREAS, There is substantial evidence that powerful forces and agencies are working toward the development of health insurance in the United States; and

WHEREAS, During the course of its studies of medical economic problems, the Michigan State Medical Society, after a conference with officials of the American Medical Association, found it necessary to send a commission to England to inquire into the subject of health insurance; and

WHEREAS, The commission presented the following report—which has been printed in full in the *Journal of the Michigan State Medical Society*—and placed in printed form in the hands of all of the delegates of this House;

WHEREAS, The report of the commission raises certain grave questions concerning the policy of the officials of the American Medical Association toward health insurance and the effects of this policy on the practicing membership of the American Medical Association; and

WHEREAS, The report of the commission was transmitted to the Board of Trustees of the American Medical Association through the chairman in February 1934; and

WHEREAS, The Michigan State Medical Society has received no word nor has it any other evidence that the Board of Trustees of the American Medical Association has considered or acted on the report transmitted in February 1934; therefore be it

Resolved, That in order to avert a repetition in the United States of the disastrous consequences that attended the adoption of health insurance in England, the Speaker of the House of Delegates of the American Medical Association appoint a committee to investigate and consider the policy of the Association toward health insurance and present a report to the House of Delegates.

Your reference committee has reviewed with painstaking interest the report of the procedures of the commission of the Michigan State Medical Society, commends the efforts of the commission to study and digest an important social operation concerned with medical service in England, applauds the sanity of its conclusion and its recorded opposition to the introduction into the United States of any system of health insurance now existing in any country in Europe, because no system conforms at present with all of the policies adopted by the Michigan House of Delegates in July 1933; namely:

1. Free choice of physician by the insured.
2. Limitation of benefits to those of medical service.
3. The control of medical service benefits by the profession.
4. The exclusion of individuals or organizations that might engage in health insurance for profit.

Your committee believes that their principles are basically sound and that they should be included within any further study of medical service to be adopted as the policy of organized medicine.

Your committee regrets the criticisms of policy and sincerity of officials of the American Medical Association and the publicity given to them and finds that it was due to a misunderstanding regarding information which failed to reach the delegates from Michigan. This relates to the efforts of the Board of Trustees, the Bureau of Medical Economics, the Secretary and the Editor to study continuously all forms of social experiment affecting the practice of medicine.

Your committee believes in the sincerity of the officials of the American Medical Association in promoting free access of any member of the Association to all of the files and completed records in which he may be interested.

The Chairman of the Board of Trustees presented the following statement at an earlier session of the House:

Since 1912, when the British government, through the action initiated by Lloyd George, established a system of compulsory health insurance, this problem has been prominently before the House of Delegates and other official bodies of the American Medical Association. As early as 1916, the House of Delegates requested the Board of Trustees to

undertake an investigation of social insurance in all its forms and to make suitable report to the House. The subject has been raised from time to time since that date. On every occasion on which the House of Delegates has officially considered the questions of compulsory health insurance and social insurance, as well as the entrance of the state into medical practice, it has reaffirmed the independence of medicine as a profession and it has always condemned any system whereby the state would in any way enter into the practice of medicine. In 1920, following the report of the committee appointed to study compulsory health insurance, the House of Delegates adopted a resolution strongly condemning all forms of compulsory health insurance.[1] It is a well known fact that voluntary insurance has always been the forerunner of compulsory insurance, and even the most ardent advocates of voluntary insurance admit that fact. The action of that House of Delegates has not been rescinded by any subsequent action taken by the House of Delegates.

As far as state medicine is concerned, the House of Delegates in 1921 adopted a resolution approving and endorsing all activities and policies of the states directed to the prevention of disease, but opposing the state treatment of disease except for the delinquent and the defective.[2] Again in 1922 the Association declared its opposition to all forms of state medicine because of the ultimate harm that would come thereby to the public weal through such form of medical practice.

The Judicial Council of the Association has repeatedly brought reports to this House of Delegates sustaining the same point of view, and all these reports of the Judicial Council have been accepted and approved by the House of Delegates.

Finally, last year the House of Delegates unanimously approved in principle the Minority Report of the Committee on the Costs of Medical Care and urged that the Board of Trustees of the American Medical Association in cooperation with its constituent bodies conduct an intensive campaign to disseminate this point of view among the medical profession and the public, with a view to the maintenance of high ethical standards and the preservation of professional ideals.

Your Board of Trustees, your executives and all the publications of this Association have done their utmost thus far to carry out the policies which you have established. Today we are confronted with an extraordinary situation of the utmost importance to the health and welfare of the American people and to the American medical profession. It is no secret that a considerable number of foreign nations have already established state systems of medical care and that an intensive campaign has been carried on in this country for many years, led by philanthropists, social workers, economists and various foundations, to cause the American medical profession and the American people to accept a similar type of medical practice. In accordance with the mandate of this House of Delegates, all the facilities of the American Medical Association have been used to oppose this trend and the propaganda in support of it, which has been widely circulated and for which vast sums of money have been, and are being, expended by various interested parties. It is also now well known that the President of the United States, in a recent message, has come forth for the principle of social insurance, with special reference to old age pensions and unemployment insurance.

In 1930 the House of Delegates recommended to the Board of Trustees the establishment of a Bureau of Medical Economics in the headquarters office for the study of all these problems as they affect the medical profession. From time to time this Bureau has issued bulletins of the greatest importance, not only for the factual data which they present but also for the interpretation of medical economic trends. In accordance with a special request by the Board of Trustees, your Bureau of Medical Economics has prepared an extended statement of the conditions in relationship to state medicine and compulsory insurance, as they exist in other nations. This statement was made available to all Fellows of the American Medical Association by publication in the BULLETIN of the Association for April 1934. In connection with the publication of these data and this critical analysis, the Bureau of Medical Economics has also drawn up a statement entitled Sickness Insurance Problems in the United States, which purports to be an interpretation of the data already referred to and which includes a presentation of twelve basic principles, which should be given most careful study in relationship to any recommendations that this House may care to make on this problem for the future. This statement will now be distributed to the House of Delegates.

There are manifestations of unrest in relationship to the economic situation among some of the component and constituent bodies of this association. On several occasions, communications have been made to the Board of Trustees and to the headquarters office, urging a change in the activities of the organization which would in effect demand a departure from the policies set down by this House of Delegates during the past eighteen years. The problem is before you. The opportunity is offered here this afternoon for an extensive discussion of the situation as it confronts the medical profession today. The Board of Trustees hopes that you will give it earnest and careful consideration. Only the House of Delegates has the power to define the policies that are to guide this Association in the coming years.

Your committee believes that this statement of the Chairman of the Board of Trustees briefly reviewing the history of the action of the House of Delegates during the past eighteen years sufficiently illuminates the sincere and deep concern of the American Medical Association regarding all social programs affecting the delivery of medical service.

The delegates have in their hands a pamphlet entitled "Sickness Insurance Problems in the United States" as presented by the Board of Trustees.

Your committee does not recommend any plan but has abstracted from the pamphlet the following principles and suggests that they be followed by all constituent bodies of the American Medical Association as bases for the conduct of any social experiments that may be contemplated by them:

First: All features of medical service in any method of medical practice should be under the control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

Second: No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.

Third: Patients must have absolute freedom to choose a duly qualified doctor of medicine who will serve them from among all those qualified to practice and who are willing to give service.

Fourth: The method of giving the service must retain a permanent, confidential relation between the patient and a "family physician." This relation must be the fundamental and dominating feature of any system.

Fifth: All medical phases of all institutions involved in the medical service should be under professional control, it being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value depends on their operation according to medical standards.

Sixth: However the cost of medical service may be distributed, the immediate cost should be borne by the patient if able to pay at the time the service is rendered.

Seventh: Medical service must have no connection with any cash benefits.

1. Index and Digest, Official Actions of American Medical Association, p. 53.
2. Index and Digest, Official Actions of American Medical Association, p. 175.

Eighth: Any form of medical service should include within its scope all qualified physicians of the locality covered by its operation who wish to give service under the conditions established.

Ninth: Systems for the relief of low income classes should be limited strictly to those below the "comfort level" standard of incomes.

Tenth: There should be no restrictions on treatment or prescribing not formulated and enforced by the organized medical profession.

If it is determined in a community that some experiment to change or improve the method of administering medical service is desirable, observance of these principles will remove many of the "disturbing influences" from such an experiment. In all such experiments, attention must be sharply focused on the quality of medical service.

Such restrictions will undoubtedly lower the enthusiasm of many of the present advocates of such schemes. They remove the interest of the politician, the commercial promoter and all those who consciously or unconsciously are seeking to achieve other objectives than better medical care for those unable to provide such care for themselves under present conditions. All these principles are directed toward protecting the character of the service to be given and all are directly designed to guard against abuses which experience shows are bound to arise when these principles are neglected. In most communities it will be found that comparatively few changes in the methods of administering medical care will be necessary. That type of medical practice which preserves the personal relationships between physician and patient, that maintains the practice of medicine as a profession, and that has withstood the test of centuries must be preserved for the best interests of both the public and the medical profession.

The report of the committee was adopted section by section and as a whole on motions of Dr. Van Etten, duly seconded and carried, with the substitution of the words "legally qualified Doctor of Medicine" for the word "physician."

Requests for Appointment of Standing Committee to Continue Study of Subject

A proposal was submitted by Dr. J. D. Brook, Michigan, to the effect that a standing committee of seven from the House of Delegates, composed of men in active practice of medicine, be appointed by the Speaker to continue the further study of the subject. This was referred to the Reference Committee on Medical Economics.

Press Committee

On motion of Dr. H. A. Luce, Michigan, seconded by Dr. Fred Moore, Iowa, and carried after discussion, the Speaker was requested to appoint a press committee for the release of such information as the committee may deem proper relative to matters discussed in the executive session. The Speaker appointed the following press release committee: Drs. Nathan B. Van Etten, Frederic E. Sondern and Morris Fishbein.

There ensued discussion by Dr. Nathan B. Van Etten, New York; Dr. H. M. Johnson, Minnesota; Dr. Frederic E. Sondern, New York; Dr. Holman Taylor, Texas; Dr. J. Newton Hunsberger, Pennsylvania; Dr. W. A. Bates, South Dakota; Dr. Walter E. Vest, West Virginia; Dr. William H. Mayer, Pennsylvania; Dr. H. H. Shoulders, Tennessee; Dr. Arthur C. Morgan, Pennsylvania; Dr. Joseph A. Pettit, Board of Trustees; Dr. R. W. Fouts, Nebraska; Dr. John F. Hagerty, New Jersey; Dr. Crum Epler, Colorado; Dr. Virgil Simpson, Kentucky; Dr. William D. Johnson, New York; Dr. G. Henry Mundt, Illinois; Dr. E. H. Cary, Texas; Dr. Morris Fishbein, Editor of THE JOURNAL; Dr. Leonce J. Kosminsky, Arkansas; Dr. Charles H. Goodrich, New York; Dr. Felix J. Underwood, Mississippi; Dr. George P. Johnston, Wyoming; Dr. William D. Chapman, Illinois; Dr. T. B. Throckmorton, Section on Nervous and Mental Diseases; Dr. William G. Ricker, Vermont; Dr. Fred Moore, Iowa; Dr. Olin West, Secretary, and Dr. Austin A. Hayden, Board of Trustees.

Resolution on Communications to Delegates

Dr. Arthur C. Morgan, Pennsylvania, presented the following resolution, which was referred to the Reference Committee on Medical Economics:

Resolved, That it is the sense of this House of Delegates that the Secretary of the American Medical Association shall in his discretion communicate with the members of the house of delegates from the state society concerned, when communications of criticism from the rank and file are received at the headquarters, for friendly suggestion and recommendation.

The House of Delegates adjourned from executive session into regular session.

Report of the Reference Committee on Miscellaneous Business

Dr. H. B. Everett, Chairman, presented the following report:

On resolution introduced by Dr. Vander Veer at the request of the House of Delegates of the Medical Society of the State of New York pertaining to administration of anesthetics, which was recommitted for further action, your committee is of the opinion that, owing to the varying conditions which prevail in urban and rural districts, the matter in question deserves more careful study and survey than this committee can give at this time. We recommend that this resolution be referred to the Council on Medical Education and Hospitals for further study and report at a later time.

Respectfully submitted.

H. B. EVERETT, Chairman.
E. N. ROBERTS.
J. D. COLT.
G. W. WELLS.
H. A. MILLER.

On motion of Dr. Everett, seconded by Dr. Arthur J. Bedell, New York, and carried, the report was adopted.

Report of the Judicial Council

Dr. George Edward Follansbee, Chairman, presented the following report:

1. Resolution from the House of Delegates of Oklahoma: This resolution provides that the American Medical Association adopt policies by which it shall not approve any hospital or other institution for any purpose unless and until it has been officially approved by the medical society of the county in which it is located.

The terms of this resolution are so broad and indefinite that the Judicial Council believes them to be unpractical. It is also of the opinion that the question of approval or disapproval of the hospitals, or other institutions of the country should be based on a uniform standard and appraisal rather than on such varying standards as would be the case if the appraisal were the function of the local medical society. This opinion is not changed by a provision in the resolution granting to a disapproved institution the right of appeal to the American Medical Association.

The Council is of the opinion that, so far as the Council on Medical Education and Hospitals goes in obtaining information and laying down the principles governing approval, its work is well done and not open to criticism. However, it may be advisable in establishing its standards for approval to extend its field of inquiries beyond the professional and economic features into the ethical as well.

For the foregoing reasons the Judicial Council disapproves the resolution.

2. Resolution presented by Dr. Ben R. McClellan, Ohio: This resolution asks that renewed attention and emphasis be placed on an action taken by the House of Delegates in 1924.

The Judicial Council recommends its adoption. The resolution is as follows:

WHEREAS, There are occasional evidences of advertising, publicity and propaganda by certain large clinics in violation of the proper ethical and professional restrictions placed on individual physicians; therefore be it

Resolved, By the House of Delegates of the American Medical Association at its Eighty-Fifth Annual Session in Cleveland, June 11 to 15, 1934, that attention of the county medical societies be called and emphasis again be placed on the following declaration of policy and principle incorporated in resolutions adopted by this body in 1924:

1. Publicity by clinics, hospitals, sanatoriums and other semipublic medical institutions as to quality of work done implies unusual and

exceptional ability and efficiency on the part of their professional staffs and therefore is advertising of the medical men concerned. This type of advertising distinctly savors of quackery and is unethical.

2. Publicity by any such institution stating or implying that by reason of its exceptionally fine equipment and material resources, it is able to, or does, give the public better medical service than similar institutions are able or willing to render, is advertising for purposes of self aggrandizement. Statements of this type are frequently exaggerated and misleading, and are detrimental to the best interests of the public, of the institution concerned, and of true medical progress. Publicity of this kind is unethical.

On motions of Dr. Follansbee, duly seconded and carried, the report of the Judicial Council was adopted section by section and as a whole.

Resolution on Fellowship, Containing Amendment to By-Laws

Dr. George Edward Follansbee, Chairman, Judicial Council, presented the following amendment to chapter XI, section 2, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

WHEREAS, In chapter IX, section 1, of the By-Laws is the following provision, "The judicial power of the Association shall be vested in the Judicial Council, whose decision shall be final. This power shall extend to and include (1) all questions involving Fellowship in the Scientific Assembly or the obligation, rights and privileges of Fellowship." Although the powers given are broad, the Judicial Council in its opinion is compelled by the by-law, chapter XI, section 2, to do injustice to a few physicians, not contemplated when this by-law was amended in 1930.

This by-law, by requiring that an applicant for Fellowship must have graduated from a recognized school, bars from Fellowship a few men who have attained prominence in medicine and against whom no disqualification exists except their unfortunate matriculation in a substandard school, in most if not all cases due to ignorance. Many graduates of nonrecognized schools are Fellows having become such before the amendment barring such graduates was made. Should such Fellow's Fellowship terminate temporarily for any cause, under the by-law he cannot again be admitted. Therefore, be it

Resolved, That the By-Laws, Chapter XI, section 2, be amended by adding, at the end of the section, "In exceptional cases members holding a degree equal in requirements to that of M.D., but not graduated from a recognized school, who formerly were Fellows or who have established a high standard of professional attainment, may be admitted as Fellows by the Judicial Council if in their judgment such action is desirable."

The House recessed at 5:20 p. m., to meet at 1 p. m., Thursday, June 14.

Third Meeting—Thursday Afternoon, June 14

The House of Delegates was called to order at 1 p. m. by the Speaker, Dr. F. C. Warnshuis.

Report of the Reference Committee on Credentials

Dr. J. D. Brook, Chairman, reported that 165 delegates had presented proper credentials and moved that the report of the committee be adopted. The motion was seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried.

Roll Call

Dr. Olin West, Secretary, called the roll and announced that more than a quorum of the House had responded.

Report of the Reference Committee on Credentials

Dr. J. D. Brook, Chairman, reported that an additional delegate had deposited credentials, making the total registration 166. The Speaker announced that, there being no objection, the report would be received.

Report of Judicial Council

Dr. Follansbee, Chairman, presented the following report:

The resolutions introduced by Dr. E. G. Wood, Tennessee, in effect, urge the Judicial Council to use the discretionary power to investigate general professional conditions in a community, conferred on it by the Constitution and By-Laws, in the investigation of hospitals and other institutions and to use such powers of warning, discipline and publicity as it possesses to force such hospitals and institutions as it finds guilty of unethical practices to discontinue them. They also request the Board of Trustees to finance such organizations as may be necessary to carry out the provisions of the resolutions.

It seems to the Judicial Council that the field which it probably would be necessary to cover is so extensive as to make the proposal unpractical on account of the time and expense involved. It also believes that the Council would be called on in cases of factional or trivial disputes which should be settled by the county society and brought to the Judicial Council only on appeal from the state association.

The Council recognizes that the maintenance of ethical practices in hospitals approved for intern training is important in the education of the young doctors about to enter private practice but believes that other methods of approaching the desired end should be tried before such a time consuming and expensive procedure is established.

The resolutions are therefore disapproved.

Respectfully submitted.

On motion of Dr. Ralph A. Fenton, Oregon, seconded by Dr. A. A. Walker, Alabama, and carried after discussion by Dr. H. H. Shoulders, Tennessee, the report of the Judicial Council was adopted.

Report of the Reference Committee on Medical Education

Dr. Irvin Abell, Chairman, presented the following report:

1. The resolution regarding the request for the establishment of standards, ratings and inspections of training schools in physical therapy is approved and referred to the Board of Trustees.

2. The resolution introduced by Dr. L. J. Hirschman, Michigan, and Dr. D. C. McKenney, Section on Gastro-Enterology and Proctology, on the recognition of specialties for certification by the American Medical Association, was considered by your committee, to the deliberations of which many members of the Section on Gastro-Enterology and Proctology and members of the Council on Medical Education contributed. In view of the fact that the American Medical Association recognized and provided a Section on Gastro-Enterology and Proctology, now in existence for sixteen years, this committee approves of the resolution and recommends that it be referred to the Board of Trustees and Council on Medical Education and Hospitals for determination of the methods of examination and certification in these specialties.

Respectfully submitted.

IRVIN ABELL, Chairman.
J. W. AMESSE.
J. F. HAGERTY.
FRED MOORE.
W. A. COOK.

On motions of Dr. Abell, duly seconded and carried, the report was adopted section by section and as a whole.

Report of the Reference Committee on Legislation and Public Relations

Dr. C. E. Mongan, Chairman, presented the following report:

1. In regard to the resolution introduced by Dr. John F. Hagerty on behalf of the Medical Society of the State of New Jersey, relative to investigations and prosecutions of the sale of impure foods and drugs, the committee recommends that the matter covered by this resolution be referred to the Board of Trustees.

2. Concerning the resolutions presented by Henry C. Macatee, on behalf of the Medical Society of the District of Columbia: Your committee finds that the purport of the resolutions are in accord with the policies of the American Medical Association and it is recommended that this House of Delegates regards it essentially unfair to the taxpaying public and the medical profession for the government, federal, state or municipal, to extend free medical and hospital services to persons not legally entitled thereto.

3. Concerning the resolution offered by Dr. William H. Seemann, Louisiana, with reference to the proposed extension of service of the State Charity Hospital in the city of New Orleans by the use of federal PWA funds: Your committee finds that, while the resolution is local in character, it involves a policy of national interest and concern. It is therefore recommended that this House of Delegates go on record as opposing the use of federal funds as a loan for the promotion of any enterprise the cost of which is to be eventually repaid through exploitation of the medical profession.

4. Your committee recommends the adoption of the resolution offered by Dr. George Blumer, Connecticut, with reference to patents concerning products and devices used in the practice of medicine.

Respectfully submitted.

C. E. MONGAN, Chairman.
G. C. MADILL.
C. W. WAGGONER.
HOLMAN TAYLOR.
JOSEPH F. SMITH.

The report was adopted section by section and as a whole, on motions of Dr. Mongan, duly seconded and carried.

Report of the Reference Committee on Hygiene and Public Health

Dr. W. F. Draper, Chairman, presented the following report:

1. Relative to the resolutions introduced by Dr. A. C. Morgan, Pennsylvania, providing that the House of Delegates through its proper channels suggest to the officers of the U. S. Pharmacopeial Convention 1940 and the National Formulary Convention 1940 the appointment of a representative group of pediatricians to advise in regard to the retention and deletion of remedial agents of pediatric importance and necessity: The Committee approves the resolutions and recommends their endorsement by the House of Delegates.

2. The committee has ascertained that the work contemplated in the resolution, introduced by Drs. E. A. Hines and J. H. Cannon, South Carolina, has received the approval of accredited representatives of the American Medical Association and the United States Public Health Service, and that it has also received the endorsement of the Southern Medical Association, the American Laryngological, Rhinological and Otological associations and a number of state medical societies.

In the opinion of your committee, this work is worthy of the support of the American Medical Association and the committee recommends the adoption of the resolution.

3. Relative to the resolution introduced by Dr. L. J. Hirschman, Michigan, which provides that the Board of Trustees of the American Medical Association request the Council on Pharmacy and Chemistry, the Council on Physical Therapy, the Bureau of Investigation and a committee of five to be selected by the Section on Obstetrics, Gynecology and Abdominal Surgery to investigate the virtues and dangers of the various materials and methods used for contraception and to publish its report, when complete, in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION: The committee begs to refer this resolution back to the House of Delegates without recommendation by the committee.

4. Relative to the resolutions introduced by Dr. J. D. Brook, Michigan, providing for the appointment of a special committee to study and report on the problem of birth control in all of its medical aspects, the committee recommends that the resolutions be not approved.

W. F. DRAPER, Chairman.
R. W. FOUTS.
J. W. BURNS.
R. L. GREEN.
E. F. CODY.

On motion of Dr. Draper, duly seconded and carried, the report of the committee was adopted section by section.

Dr. Draper stated, on inquiry by the Speaker, that the committee had a resolution of the Maine Medical Association but that it was simply a resolution of that association for the information of its delegates, and the committee did not feel that it was called on to act on that resolution.

On motion of Dr. Draper, seconded by Dr. William H. Mayer, Pennsylvania, and carried, the report of the committee was adopted as a whole.

Report of the Reference Committee on Amendments to the Constitution and By-Laws

Dr. H. H. Shoulders, Chairman, presented the following report:

Concerning an amendment to the By-Laws regarding Fellowship, introduced by Dr. George Edward Follansbee, Chairman of the Judicial Council, the preamble of the resolution sets out the reasons for the adoption of the amendment.

In the opinion of your committee, the adoption of this amendment will enable the Judicial Council to deal justly with applicants for Fellowship. It will not admit to Fellowship any one who does not deserve it. It will enable the Council to admit some who deserve Fellowship but to whom that relationship is denied on technical grounds only.

Your committee recommends the adoption of the amendment.

Respectfully submitted.

H. H. SHOULDERS, Chairman.

Dr. Shoulders moved that the amendment to the By-Laws be adopted. The motion was seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried.

Report of the Reference Committee on Reapportionment of Delegates

Dr. Olin West, Chairman, presented the following report:

The present apportionment of delegates is on the basis of one delegate for each 800 members or fraction thereof. Each constituent association is represented by at least one delegate irrespective of the number of members.

Number of Delegates Based on Different Ratios

State	Number of Members, 4/1/34	Bases of Apportionment and Number of Delegates Under Each 775	800
Alabama	1,452	2	2
Arizona	246	1	1
Arkansas	880	2	2
California	5,167	7	7
Colorado	1,069	2	2
Connecticut	1,472	2	2
Delaware	195	1	1
District of Columbia	676	1	1
Florida	971	2	2
Georgia	1,689	3	3
Idaho	194	1	1
Illinois	6,879	9	9
Indiana	2,807	4	4
Iowa	2,191	3	3
Kansas	1,536	2	2
Kentucky	1,698	3	3
Louisiana	1,169	2	2
Maine	718	1	1
Maryland	1,432	2	2
Massachusetts	4,619	6	6
Michigan	3,218	5	5
Minnesota	2,212	3	3
Mississippi	1,218	2	2
Missouri	3,212	5	5
Montana	311	1	1
Nebraska	1,058	2	2
Nevada	102	1	1
New Hampshire	499	1	1
New Jersey	2,899	4	4
New Mexico	206	1	1
New York	13,074	17	17
North Carolina	1,516	2	2
North Dakota	368	1	1
Ohio	5,168	7	7
Oklahoma	1,571	2	2
Oregon	706	1	1
Pennsylvania	7,831	11	10
Rhode Island	493	1	1
South Carolina	893	2	1
South Dakota	266	1	1
Tennessee	1,597	3	2
Texas	3,879	6	5
Utah	379	1	1
Vermont	350	1	1
Virginia	1,823	3	3
Washington	1,312	2	2
West Virginia	1,196	2	2
Wisconsin	2,121	3	3
Wyoming	139	1	1
Alaska	14	1	1
Hawaii	221	1	1
Isthmian Canal Zone	108	1	1
Philippine Islands	666	1	1
Puerto Rico	331	1	1
Army, Navy & P. H. S.		3	3
For 15 Sections		15	15
TOTAL		172	168

Total voting membership of House shall not exceed 175.

The By-Laws specifically provide that the total membership of the House of Delegates shall not exceed 175. The total membership of the Association on April 1, as recorded in the office of the Secretary, was 98,041.

An apportionment on the basis of one delegate for each 750 members would produce a total of 177 delegates, two more than are permitted by the By-Laws.

On the basis of one delegate for each 775 members, the total membership of the House would be 172, which is one less than the present membership. On this basis, Pennsylvania and Texas would each gain one delegate, while Alabama, Illinois and North Carolina would each lose one delegate.

On the basis of one delegate for each 800 members, the total membership of the House would be 168. On this basis Alabama, Illinois, North Carolina, Oklahoma and Tennessee would each lose a delegate.

The committee recommends that the apportionment of delegates for the next three years be made on the basis of one delegate for each 775 members or fraction thereof. Each state medical association, irrespective of the number of members, no matter how small its membership may be, is entitled to one delegate. On this basis, the membership of the House will be 172.

Respectfully submitted.

OLIN WEST, Chairman.
F. C. WARNSHUIS.
C. B. REED.

On motion of Dr. C. B. Reed, Illinois, seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried, the report of the Reference Committee on Reapportionment of Delegates was adopted.

Report of the Reference Committee on Medical Economics

Dr. Frederic E. Sondern, Chairman, presented the following report:

1. Relative to the resolutions from the Medical Society of New Jersey, presented by Dr. John F. Hagerty, your committee recognizes fully the serious tenor of these resolutions and the urgent desire of the delegates from New Jersey to secure the complete cooperation of this House in the matter.

Your committee feels, however, that the report of the special committee accepted by this House covers fully the requests made and also that the endorsement of this House one year ago of the Minority Report of the Committee on the Costs of Medical Care must be kept in mind therewith.

2. Relative to the resolution presented by Dr. A. C. Morgan, Pennsylvania, requesting the Secretary in his discretion to communicate with members of the House of Delegates from the state societies concerned when communications of criticism are received from the rank and file, your committee would commend this effort in the interest of understanding and harmony and believes that the matter may well be left to the discretion of the Secretary of the Association.

3. Relative to the resolution requesting the appointment of a standing committee of seven, your committee assumes that this resolution was prompted by the accepted report of the special committee and, therefore, deals with the matter of sickness insurance although this does not appear clearly in the resolution itself. Your committee is in complete sympathy with any effort that will aid in the clarification of this matter and in the finding of a concrete solution. It must be apparent to all that the Bureau of Medical Economics of the American Medical Association not only has every facility for the further study asked for but also has demonstrated its efficiency, thoroughness and impartiality in this regard. Your committee would recommend that if the Bureau of Medical Economics feels the need of an advisory committee of outstanding members of the Association, a request for the same to the Board of Trustees would have every consideration.

On motions of Dr. Sondern, duly seconded and carried, the report of the committee was adopted section by section and as a whole.

Resolutions Referred Back to the House by the Reference Committee on Hygiene and Public Health

The Speaker presented to the House the resolution introduced by Dr. L. J. Hirschman, Michigan, and the resolutions introduced by Dr. J. D. Brook, Michigan, which had been referred to the Reference Committee on Hygiene and Public Health and referred back to the House by that reference committee without recommendation, and asked what the pleasure of the House was with respect to them.

Dr. B. F. Bailey, Nebraska, moved that the resolutions be tabled. The motion was seconded by Dr. Horace Reed, Oklahoma, and carried.

Report from the Section on Nervous and Mental Diseases

Dr. Tom B. Throckmorton, Section on Nervous and Mental Diseases, presented the following report:

A committee appointed by the Section on Nervous and Mental Diseases last year met with similar committees of the American Psychiatric Association and the American Neurological Association at a preliminary meeting in New York in December 1933 to consider the formation of a board of examiners in psychiatry and neurology for the purpose of certifying physicians in these respective branches of medicine. At this conjoint meeting, certain broad principles were laid down; the name decided on for the governing board was the American Board of Psychiatry and Neurology. It was the consensus that there should be equal representatives of neurology and psychiatry on the board of examiners and that the board should be composed of four members from the American Psychiatric Association, four members from the American Neurologic Association, and two psychiatrists and two neurologists appointed by the Section on Nervous and Mental Diseases of the American Medical Association. It was also the consensus of the meeting that there should be drawn up by the Board of Psychiatry and Neurology separate qualifications for psychiatrists and for neurologists and that there should be separate examinations for applicants wishing to be certified in one or both of these specialties.

The American Psychiatric Association and the American Neurological Association, through their respective Councils, later approved the formation of the American Board of Psychiatry and Neurology.

The committee from the Section on Nervous and Mental Diseases, in conjunction with committees appointed by the American Neurological and the American Psychiatric Associations, then proceeded to draw up recommendations for the guidance of the Board of Certification on Psychiatry and Neurology in establishing the requirements for such certification in these respective specialties.

As a result of these various deliberations on the part of the special committee appointed last year from the Section on Nervous and Mental Diseases, the committee from the American Psychiatric Association and the committee from the American Neurological Association, the following recommendations were adopted by the Section on Nervous and Mental Diseases:

1. That the Section on Nervous and Mental Diseases of the American Medical Association cooperate with the American Psychiatric Association and the American Neurological Association in the establishment of the American Board of Psychiatry and Neurology.

2. That four members of the section, two neurologists and two psychiatrists, be elected to serve on the board for terms of from one to four years; that each year hereafter a member be elected to take the place of the retiring member, neurology and psychiatry being always equally represented.

On motion of Dr. Throckmorton, seconded by Dr. J. Allen Jackson, Pennsylvania, and carried, the report was adopted.

Resolutions Registering Disapproval of Employment of Optometrists by Hospitals, from the Section on Ophthalmology

Dr. Emory Hill, Section on Ophthalmology, presented the following resolutions, which were adopted on motion of Dr. Hill, seconded by Drs. W. Albert Cook, Oklahoma, and G. Henry Mundt, Illinois, and carried:

WHEREAS, It has come to the attention of the officers of the Section on Ophthalmology that some hospitals employ optometrists to prescribe glasses; and

WHEREAS, The members of the section are convinced that this practice is not to the best interest of the patient; and

WHEREAS, The only reason for such an unprofessional method seems to be monetary reward to the hospital; and

WHEREAS, The younger ophthalmologists need practice in refraction which is best secured under the direction of skilful physicians devoting themselves to the treatment of diseases of the eye; be it

Resolved, That the Section on Ophthalmology of the American Medical Association hereby registers its disapproval of the employment of optometrists by hospitals; and be it further

Resolved, That the House of Delegates of the American Medical Association be urged to institute the necessary measures to stop this pernicious invasion of the practice of medicine.

Resolution on the Definition of Blindness, from the Section on Ophthalmology

Dr. Emory Hill, Section on Ophthalmology, presented the following resolution, which was adopted on motion of Dr. Hill, seconded by Dr. Ralph A. Fenton, Oregon, and carried:

WHEREAS, A committee was appointed by the Section on Ophthalmology of the American Medical Association, in response to a request from the Department of Public Welfare of the State of Illinois, for a definition of blindness in scientific terms, that might be made statutory; and

WHEREAS, There are various grades of blindness which should be distinguished; therefore be it

Resolved, That the following definitions for grades of blindness be accepted by the House of Delegates:

Total Blindness is inability to perceive light; lack of light perception. The person who is totally blind cannot tell whether strong light falls on his eyes or whether they are in total darkness. Light perception is vision such as one has when the eyelids are closed.

Economic Blindness is absence of ability to do any kind of work, industrial or otherwise, for which sight is essential. In general, visual acuity of less than one tenth has been classed as economic blindness, meaning that objects can be recognized only when brought within one tenth of the distance at which they can be recognized with standard vision. Such vision in the better eye when corrected with the best possible glass would be recorded as less than 0.1 or 6/60 or 20/200, or as an equally disabling loss of the visual field.

Vocational Blindness is impairment of the vision that makes it impossible for a person to do work at which he had previously earned a living. He may still have vision enough to do some other kind of work that may yield him an adequate support. Such vision in the better eye with the best possible correcting glass may vary from one tenth to one third; that is, from 0.1 or 6/60 or 20/200 to 0.3 or 6/18 or 20/60, depending on the vision required for the occupation previously followed.

Educational Blindness is such loss of sight as makes it difficult, dangerous or impossible to learn by the methods that are commonly used in schools. This necessitates two types of schooling for such individuals; namely, sight saving classes and schools for the blind. The requirement for admission to sight saving classes is vision in the better eye with the best possible correcting glass of less than 20/70 and more than 20/200.

The requirement for admission to the school for the blind is vision in the better eye with the best possible correcting glass of 0.1 or 6/60 or 20/200 or less.

Communication from the Session on Forensic Medicine of the Section on Miscellaneous Topics

The Secretary presented the following communication from the Session on Forensic Medicine of the Section on Miscellaneous Topics, which on motion of Dr. A. A. Walker, Alabama, seconded by Dr. Fred Moore, Iowa, and carried, was referred to the Council on Scientific Assembly:

On motion by Dr. Harrison S. Martland, duly seconded and carried, it was voted that the session organize a committee for the purpose of acquainting the suitable authorities in the legal profession with the existence and reliability of the blood grouping tests, so that statutes may be enacted authorizing courts to order individuals to submit to blood grouping tests when they are required, in those jurisdictions in which blood tests are not obligatory at present.

On motion of Dr. Oscar T. Schultz, Evanston, Ill., seconded by Dr. Harrison S. Martland, Newark, N. J., it was voted that the session, through the secretary, express its appreciation to the proper officials of the American Medical Association for the privilege of having held this meeting, of the necessity and advisability of future meetings of this session at other meetings of the Association, and that a committee be appointed to study this question of the advisability of future meetings.

Communications from the Catholic Medical Mission Board and from the Kentucky State Medical Association

The Secretary presented a communication from the Catholic Medical Mission Board requesting a meeting of doctors especially interested in the work of that board.

The Secretary also presented a letter from Dr. A. T. McCormack, Secretary of the Kentucky State Medical Association, inviting the House of Delegates of the American Medical Association to attend the unveiling of the plaque in honor of the pioneer physicians of Kentucky at Fort Harrod, Harrodsburg, Ky., June 21.

Dr. Mather Pfeiffenberger, Illinois, moved that the communication be accepted and placed on file and that the invitation be accepted. The motion was seconded by Dr. Randolph Winslow, Maryland, and carried.

Resolution on Proper Medical Care

Dr. Ralph Fenton, at the request of Dr. Joseph A. Pettit, received the unanimous consent of the House to present the following resolution, which was adopted on a motion of Dr. Fenton, seconded by Dr. Arthur J. Bedell, New York, and carried after discussion by Drs. J. Tate Mason, Section on Surgery, General and Abdominal, and Joseph A. Pettit, Trustee:

WHEREAS, In accordance with the traditions governing the medical profession, physicians have always given and still give first consideration to the health and welfare of their individual patients; and

WHEREAS, The introduction into the practice of medicine of the mass production methods employed in industry cannot fail to be detrimental to the health and welfare of the individual patient; therefore be it

Resolved, That, whether definitely stated or not, it is the position of the American Medical Association that all conditions or principles adopted by the Association, concerning the position of the medical profession, in any form of medical practice, are set forth primarily in order to maintain such standards and safeguards as are essential to the maintenance of the best medical care and the protection of the health of all members of the community.

ELECTION OF OFFICERS

Election of President-Elect

The Speaker called the attention of the delegates to the provision of the By-Laws limiting to three minutes all nominating speeches, and then called for nominations for the office of President-Elect of the American Medical Association.

Dr. A. A. Walker, Alabama, nominated for President-Elect Dr. James S. McLester, Birmingham, Ala., and the nomination was seconded by Drs. C. A. Grote, Alabama; F. Clifton Moor, Florida; W. H. Robey, Massachusetts; George Blumer, Connecticut; Guy W. Wells, Rhode Island; H. B. Everett, Tennessee; William G. Ricker, Vermont; J. Tate Mason, Section on Surgery, General and Abdominal, and Irvin Abell, Kentucky.

Dr. Holman Taylor, Texas, nominated Dr. Hugh S. Cumming, Washington, D. C. The nomination was seconded by Drs. Carl Moll, in behalf of the Michigan delegation; A. R. McComas, Missouri; Stanley H. Osborn, Section on Preventive and Industrial Medicine and Public Health; John W. Amesse, Colorado; Burt R. Shurly, Section on Laryngology, Otology and Rhinology; Ralph A. Fenton, Oregon; J. Gurney Taylor, Wisconsin; Albert Soiland, Section on Radiology, and J. P. DeWitt, Ohio.

The Speaker declared the nominations closed and appointed as tellers Drs. O. S. Wightman, New York; A. J. Scott Jr., California; Vernon L. Treynor, Iowa; J. D. Colt Sr., Kansas, and James Beebe, Delaware.

The Secretary, at the request of the Speaker, announced that 156 delegates had been recorded as present and that 156 votes had been cast, of which Dr. James S. McLester, Birmingham, Ala., received 85 and Dr. Hugh S. Cumming, Washington, D. C., 71.

The Speaker declared Dr. James S. McLester, having received the majority of the votes cast, elected President-Elect of the American Medical Association.

Election of Vice President

Dr. Ben R. McClellan, Ohio, nominated for Vice President Dr. George G. Reinle, Oakland, Calif., and the nomination was seconded by Dr. Clarence G. Toland, California.

Dr. William R. Molony, California, moved that the nominations be closed, and the motion was seconded by Drs. Arthur J. Bedell, New York, and William H. Mayer, Pennsylvania, and carried.

On motion of Dr. G. Henry Mundt, Illinois, seconded by Dr. Albert Soiland, Section on Radiology, and carried, the Secretary cast the ballot of the House for Dr. George G. Reinle as Vice President for the ensuing year.

Election of Secretary

Dr. William H. Mayer, Pennsylvania, nominated Dr. Olin West, Chicago, to succeed himself as Secretary of the Ameri-

can Medical Association, and the nomination was seconded by Dr. Orrin S. Wightman, New York. On motion of Dr. E. R. Mulford, New Jersey, seconded by several and carried unanimously, the nominations were closed.

On motion of Dr. Albert Soiland, Section on Radiology, seconded by Dr. Samuel P. Mengel, Pennsylvania, and carried, the Speaker cast the ballot of the House for Dr. Olin West as Secretary of the American Medical Association and declared Dr. West elected Secretary for the ensuing year.

Election of Treasurer

Dr. J. H. J. Upham, Chairman of the Board of Trustees, nominated for the office of Treasurer Dr. Herman L. Kretschmer, Chicago. The nomination was seconded by Dr. W. F. Braasch, Minnesota, and Dr. H. W. E. Walther, Section on Urology. Dr. Mather Pfeiffenberger, Illinois, moved that the nominations be closed, and the motion was seconded by Dr. O. S. Wightman, New York, and carried.

Dr. B. F. Bailey, Nebraska, moved that the Secretary be instructed to cast the ballot of the House of Delegates for Dr. Herman L. Kretschmer, Chicago, as Treasurer. The motion was seconded by Dr. A. J. Scott Jr., California, and carried, and the Secretary cast the vote of the House for Dr. Herman L. Kretschmer, Chicago, as Treasurer of the Association for the ensuing year and the Speaker declared Dr. Kretschmer so elected.

Election of Speaker of the House of Delegates

Dr. Nathan B. Van Etten, Vice Speaker, took the chair and announced that the next order of business was the election of a Speaker of the House of Delegates.

Dr. C. S. Gorsline, Michigan, nominated for Speaker of the House of Delegates Dr. F. C. Warnshuis, Grand Rapids, Mich. The nomination was seconded by several, after which Dr. J. N. Vander Veer, New York, moved that the nominations be closed, and the motion was seconded and carried.

On motion of Dr. Albert Soiland, Section on Radiology, seconded by Dr. J. Newton Hunsberger, Pennsylvania, and Dr. Charles H. Goodrich, New York, and carried, the Secretary cast the vote of the House for Dr. F. C. Warnshuis to serve as Speaker of the House of Delegates for the next year, and Dr. Van Etten declared Dr. F. C. Warnshuis elected Speaker of the House of Delegates.

Election of Vice Speaker of the House of Delegates

The Speaker resumed the chair and called for nominations for Vice Speaker of the House of Delegates.

Dr. Arthur J. Bedell, New York, nominated Dr. Nathan B. Van Etten, New York, and the nomination was seconded by several. Dr. Thomas Farmer, New York, moved that the nominations be closed, and the motion was seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried.

On motion of Dr. J. D. Brook, Michigan, seconded by Dr. H. B. Everett, Tennessee, and carried, the Secretary cast the vote of the House for Dr. Nathan B. Van Etten as Vice Speaker of the House of Delegates, and the Speaker declared Dr. Nathan B. Van Etten elected to the office of Vice Speaker for the ensuing year.

Election of Trustees

The Speaker declared the next order of business to be the election of a trustee for a term of five years to succeed Dr. D. Chester Brown, Danbury, Conn., whose term expired this year and who, according to the By-Laws, was not eligible for reelection.

Dr. E. F. Cody, Massachusetts, nominated Dr. Roger I. Lee, Boston, and the nomination was seconded by several delegates. Dr. Arthur J. Bedell, New York, moved that the nominations be closed, and the motion was seconded by Dr. J. W. Burns, Texas, and carried.

On motion of Dr. John H. O'Shea, Washington, seconded by Dr. Ralph A. Fenton, Oregon, and carried, the Secretary cast the ballot of the House for Dr. Roger I. Lee, Boston, to serve as a member of the Board of Trustees for a term of five years, and the Speaker declared Dr. Roger I. Lee so elected.

The Speaker called for nominations for the office of Trustee to succeed Dr. Allen H. Bunce, Atlanta, Ga., whose term of office had expired.

Dr. C. W. Roberts, Georgia, nominated Dr. Allen H. Bunce, Atlanta, Ga., to succeed himself. The nomination was seconded by several, after which, on motion of Dr. H. B. Everett, Tennessee, seconded and carried, the nominations were closed.

On motion of Dr. H. H. Shoulders, Tennessee, seconded by Dr. Leonce J. Kosminsky, Arkansas, and carried, the Secretary cast the ballot of the House for Dr. Allen H. Bunce, Atlanta, Ga., to succeed himself as Trustee for a term of five years, and the Speaker declared Dr. Allen H. Bunce so elected.

Address of President-Elect James S. McLester

The Speaker introduced President-Elect James S. McLester, who addressed the House as follows:

When you raise a man suddenly to a great height it makes him a bit dizzy, and he doesn't know just what to say. In raising me to a position of leadership in this, the greatest medical organization in the world, you have raised me to great heights indeed and I am warmly appreciative.

I am also deeply conscious of a sense of obligation, and in my poor way I shall endeavor to fulfil this obligation properly.

We live in a changing world. All human relationships are being examined if not in actual process of readjustment, and this is especially true of that happy relationship which has existed for so many generations between doctor and patient. We must see to it, you and I, in these changing times that no violence is done that fine relationship.

I have a great deal of faith, I am confident, and I say this after mature deliberation, that for the physician of character and training the world will always find a suitable reward and a place, not a mere cog in a bureaucratic piece of machinery, but as a counselor who fills a human and a thoroughly personal relationship.

In our efforts toward the realization of that, I pledge you the best there is in me.

Nominations for Standing Committees

Dr. Walter L. Bierring, President, presented the following nominations for Standing Committees:

Judicial Council: Dr. Emmett P. North, St. Louis, to succeed Dr. James B. Herrick, for a term ending in 1939.

Council on Medical Education and Hospitals: Dr. Fred Moore, Des Moines, Iowa, to succeed Dr. Emmett P. North, for a term ending in 1941; Dr. John H. Musser, New Orleans, to succeed Dr. James S. McLester, who had been elected President-Elect, for a term ending in 1940.

Council on Scientific Assembly: Dr. Irvin Abell, Louisville, Ky., to succeed himself, for a term ending in 1939; Dr. Cyrus C. Sturgis, Ann Arbor, Mich., to fill the unexpired term of Dr. John E. Lane, deceased, for a term ending in 1936.

On motion of Dr. Arthur J. Bedell, New York, seconded by Dr. Thomas F. Thornton, Iowa, and carried, the House confirmed the nominations.

Election of Honorary, Affiliate and Associate Fellows

REPORT OF COUNCIL ON SCIENTIFIC ASSEMBLY

The Secretary presented the report of the Council on Scientific Assembly recommending the election of Dr. Howard Atwood Kelly, Baltimore, to Honorary Fellowship. Dr. Randolph Winslow, Maryland, moved that the report be adopted. The motion was seconded by Dr. Irvin Abell, Kentucky, and carried.

APPLICANTS FOR ASSOCIATE FELLOWSHIP FROM AMERICAN MEDICAL MISSIONARIES APPROVED BY THE JUDICIAL COUNCIL

Bell, L. Nelson, Tsingkiangpu, China.
Brown, Roswell K., Tripoli, Syria.
Botka, L. H., Shanghai, China.
Dawson, Calvin D., Puebla, Puebla, Mexico.
Demaree, Eugene W., Wonsan, Korea.
Henke, Harold E., Shuntehfu, Hopei, China.
Hutchison, Harry S., Tanta, Egypt.
James, Harold E., Chungking, Szechwan, China.

Kemp, Alexander H., Malange, Angola, Africa.
Marcus, Elias G., Cholo, Nyasaland, Africa.
Pixley, John S., Managua, Nicaragua.
Wilbur, Leonard F., Peiping, China.
Crawford, Porter J., Recife, Pernambuco, Brazil.

APPLICANTS FOR ASSOCIATE FELLOWSHIP NOMINATED BY THE SECTIONS INDICATED

SURGERY, GENERAL AND ABDOMINAL

Loucks, H. H., Peiping, China.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY

Christiansen, George W., Detroit.

PATHOLOGY AND PHYSIOLOGY

Cohn, Maurice L., Denver.
Fleisher, Moyer S., St. Louis.

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

McAlpine, James G., Montgomery, Ala.

Dr. Mather Pfeiffenberger, Illinois, moved that the applicants listed be elected to Associate Fellowship in the American Medical Association. The motion was seconded by Dr. Felix J. Underwood, Mississippi, and carried.

APPLICANTS FOR AFFILIATE FELLOWSHIP APPROVED BY THE COUNCIL ON SCIENTIFIC ASSEMBLY

On motion of Dr. W. H. Breuer, Missouri, seconded by Dr. Ralph A. Fenton, Oregon, and carried, the following were elected to Affiliate Fellowship in the American Medical Association:

Abbott, H. P., Providence, R. I.
Braunwarth, Anna M., Chicago.
Braunwarth, Emma L., Muscatine, Iowa.
Bacon, C. S., Chicago.
Bliss, M. A., St. Louis.
Cohn, Salo, New York.
Goble, Ezra T., Earlville, Ill.
Gaston, William, Clarksburg, W. Va.
Hektoen, Ludvig, Chicago.
Howland, Edward DeMonte, Chicago.
Jackson, Charles William, Monson, Mass.
Kingsbury, D. W., Nanticoke, Pa.
LeTourneau, R. A., Chicago.
Linzz, H. P., Wheeling, W. Va.
Luehr, Edward, South Chicago.
Noble, W. L., Chicago.
Newman, Henry P., San Diego, Calif.
Ravold, Amand, St. Louis.
Robinson, F. J., Fairfield, Maine.
Stanton, Samuel C., Hinsdale, Ill.
Wright, Franklin R., Minneapolis.

Place of 1935 Annual Session

The Speaker announced that the next order of business was the selection of the place of the 1935 annual session and requested the Board of Trustees to present nominations.

Dr. J. H. J. Upham, Chairman, presented the following report of the Board of Trustees:

Mr. Speaker, Members of the House:

Within the actual prescribed time for the presentation of invitations for the place of meeting, there was but one invitation received, that from Atlantic City. The Board of Trustees, according to your direction, has inspected the facilities of Atlantic City and finds that city abundantly able to take care of this meeting in 1935.

A little later than the prescribed time was received an invitation from the city of Chicago. The Board has investigated the facilities at Chicago and knows no one building that has the facilities for housing all the meetings of the Association. It gives the preference of its recommendation to Atlantic City for 1935.

Dr. Walt P. Conaway, New Jersey, extended an invitation from Atlantic City, after which, on motion of Dr. James N. Vander Veer, New York, seconded by Dr. Arthur C. Morgan, Pennsylvania, and carried, the Secretary cast the vote of the House of Delegates for Atlantic City as the place of meeting of the American Medical Association in 1935, and the Speaker declared that the House had selected Atlantic City for its 1935 session.

UNFINISHED BUSINESS

Vote of Appreciation

Dr. James N. Vander Veer, New York, moved that the House of Delegates extend the cordial thanks and appreciation of the members of the Association to all those who contributed to their pleasure, entertainment and comfort, and to the press of the country as well as of the city of Cleveland who rendered such splendid service to the Association. The motion was seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried.

Appreciation of Services of Dr. D. Chester Brown

Dr. George Blumer, Connecticut, moved that the House of Delegates extend to Dr. D. Chester Brown, Danbury, Conn., who this year retired as a member of the Board of Trustees, a resolution of appreciation for his services. The motion was seconded by several and carried, and the Speaker conveyed to Dr. Brown the appreciation of the House.

Dr. Brown addressed the House as follows:

Mr. Speaker and Gentlemen of the House of Delegates:

I think you are going to establish a very bad precedent if you are going to reward the services of your members of the Board of Trustees by calling them up and giving them special recognition; it is going to be something that will take a good deal of your time, because many of them deserve very much more recognition than I.

I take great pleasure in expressing to you at this time what the Board of Trustees has as an animating purpose throughout its deliberations. You elect them to represent you during the time that you are not in session, and having had seventeen years on the Board I want to state to you that a loyalty to this House animates the Board in every action it takes. You have no idea how extensive that is, how it follows through every action of the Board, and there is never at any time a desire to usurp the prerogatives of the House of Delegates.

It has been a great pleasure to me during these past seventeen years to have served you, and I thank you very much for this expression of your appreciation.

Invitation from Miami, Florida

Dr. F. Clifton Moor, Florida, gave notice that Miami, Fla., would extend an invitation to the Association to meet in Miami in 1936.

The House of Delegates adjourned sine die at 3:25 p. m.

(To be continued)

Association News

THE GOLF TOURNAMENT AT CLEVELAND

The twentieth annual tournament of the American Medical Golfing Association held at the Mayfield Country Club, Cleveland, June 11, was a great success, attracting a total of 185 players. Some of the leading scores were as follows:

J. P. Loudon, Yakima	76–76—152
G. R. Love, Oconomowoc	80–78—158
J. L. Lattimore, Topeka	84–76—160
Mark Bach, Milwaukee	81–81—162
R. P. Bell, Cleveland	84–81—165
J. A. Johnson, New York	78–87—165
L. Mark, Columbus	85–84—169
J. J. Marek, Cleveland	83–86—169
R. H. Birge, Cleveland	90–80—170
E. S. Egerton, Wichita	85–85—170
F. M. Casto, Cleveland	88–82—170
J. D. Fouts, Dayton	85–86—171
H. K. Nicoll, Chicago	86–86—172
F. T. Gallagher, Cleveland	87–85—172
W. A. Welsh, Youngstown	87–86—173
C. H. McCaskey, Indianapolis	86–87—173
A. V. Boysen, Cleveland	87–87—174
G. C. Glenn, St. College, Pa.	89–86—175
R. R. Hansen, Marshalltown	86–90—176
C. A. Nafe, Indianapolis	87–90—177
D. C. Brennan, Akron	86–91—177
C. P. Rutledge, Shreveport	88–89—177
H. M. Shuffle, Canton	88–90—178
W. Z. Rundles, Flint	89–89—178

At the banquet, which lasted until the small hours of the morning, prizes were awarded and Dr. Charles Lukens of Toledo was elected president of the American Medical Golfing

Association for the ensuing year; Drs. Charles H. Henninger, Pittsburgh, and John B. Morgan, Cleveland, vice presidents, and Dr. Homer K. Nicoll, Chicago, advisory director. William J. Burns, Detroit, continues as executive director.

MEDICAL BROADCASTS

Columbia Broadcasting System

The American Medical Association broadcasts on a Western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4:30 to 4:45, Central daylight saving time. The speaker will be Dr. W. W. Bauer. The next three broadcasts will be as follows:

July 5. Death Angel.
July 12. A Healthful Vacation.
July 19. Entertaining the Convalescent Child.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

Public Health Meeting.—At the seventh annual meeting of the Arizona Public Health Association, Prescott, June 5-6, Dr. William P. Shepard, San Francisco, among others, spoke on "Present-Day Opportunities for the Practicing Medical Profession in the Field of Public Health"; Dr. Warren F. Fox, director, Imperial County Health Unit, El Centro, Calif., "Problems of the County Health Unit," and Mr. H. C. Moore, chief of the Los Angeles Station, U. S. Food and Drug Administration, "Menace of Spray Residue."

State Medical Election.—Dr. Charles R. K. Swetnam, Prescott, was chosen president-elect of the Arizona State Medical Association at its annual meeting in Prescott, June 7-9; Dr. Meade Clyne, Tucson, was installed as president, and Dr. Clarence F. Harbridge, Phoenix, was reelected secretary. The next session will be in Phoenix. Out of state speakers included Drs. Dudley A. Smith, San Francisco, on "Menace of Rectal Suppositories—Care of Rectal Cases"; Edward Clarence Moore, Los Angeles, "Preoperative Preparation and Postoperative Care"; Howard K. Gray, Rochester, Minn., "Surgery of the Biliary Tract"; Arthur E. Smith, Los Angeles, "Plastic and Reconstructive Surgery of the Head"; Samuel D. Ingham, Los Angeles, "Neurologic Conditions Commonly Associated with Diabetes, Pellagra and Pernicious Anemia"; Francis C. Goodwin, El Paso, "A Bone Brace to Prevent Toe Drop in Paralytics," and George T. Colvard, Deming, N. M., "Rural Obstetrics—Delivery in the Home." Other speakers included the following physicians:

William O. Sweek and Guy C. French, Phoenix, Intestinal Obstruction.
Zebud M. Flinn, Prescott, Anorexia.
William Roy Hewitt, Tucson, Proctoscopy as an Aid to Diagnosis.
Ralph F. Palmer, Phoenix, Rating Permanent Partial Disability by Functional Measurements.
Max Pinner, Tucson, Physiology of Pulmonary Collapse.
Howell S. Randolph, Phoenix, Pneumothorax Treatment in Acute Lobar Pneumonia—Report on Eighteen Cases.
William Warner Watkins, Phoenix, Roentgen Therapy of Inflammations.
Louis C. B. Baldwin, Phoenix, Treatment of Secondary Anemia.
Robert S. Flinn, Phoenix, Treatment of Nephritis.
Robert K. Smith, Tucson, Postpartum Hemorrhage.
Meyer I. Leff, Glendale, Common Sense About Medical Ethics.

CALIFORNIA

Personal.—Dr. Edward B. Shaw has been promoted to associate clinical professor of pediatrics at the University of California Medical School, San Francisco, effective July 1.——Dr. Wilton L. Halverson has been appointed health officer of Pasadena, succeeding Dr. Jay D. Dunshee, who is now health director of the California State Department of Public Health.——Dr. Charles Newell Mell is the new health officer of Emeryville, succeeding Dr. Emily H. Emery.——Dr. Harold G. Gentry has resigned as health officer of Redlands.

Deaths from Automobile Accidents Increase.—There were 2,403 deaths caused by automobile accidents in California in 1933, as compared with 2,347 in 1932. Of the first total, 1,816 victims were men and 587 were women. Fewer deaths occurred in collisions of motor vehicles with pedestrians, but more in collisions of motor vehicles with other motor vehicles, railroad trains and electric cars. Out of 809 deaths in accidents involving motor vehicles and pedestrians, 221 were of persons 65 years of age and over, while fatalities in noncollision accidents involved the age group 15 to 24 years. More deaths in collisions of motor vehicles with motor vehicles occurred in the age groups 15 to 24 years and 25 to 34 years than any others.

COLORADO

Course in Ophthalmology and Otolaryngology.—The twelfth annual meeting of the Colorado Congress of Ophthalmology with its attendant graduate course in ophthalmology and otolaryngology will be given in Denver, July 23-August 4, a week to be devoted to each subject. Guest speakers will be Drs. Sanford R. Gifford, Chicago; Frank E. Burch, St. Paul; Edward Cecil Sewall, San Francisco; Isidore Friesner, New York, and Gordon B. New, Rochester, Minn. The fee for the course is $50 and application for registration should be made to Dr. Harry L. Whitaker, 1234 Republic Building, Denver.

CONNECTICUT

Compulsory Examination of Prisoners.—The Public Health Council of Connecticut recently passed the following regulations as amendments to the sanitary code, effective June 15.

The conviction of any person for any offense involving sexual promiscuity or illicit sex relations shall constitute reasonable grounds for a health officer to believe that that person may have been exposed to a communicable disease, and shall justify the examination and such other measures of control of that individual as are deemed necessary and proper by the state department of health for the protection of public health and the prevention of spreading of diseases.

It shall be the duty of the warden, or other person in charge of any prison or jail in the state of Connecticut, to notify the prison or jail physician in writing within twenty-four hours on the receipt of a prisoner who may have been exposed to a communicable disease, and of every prisoner who has been convicted of any offense involving sexual promiscuity or illicit sexual relations. A routine medical examination shall be made on every prisoner whose conviction involves sexual promiscuity or illicit sex relations. . . . Upon expiration of the sentence, any person having syphilis or gonorrhea, whether in an infectious or noninfectious stage, in need of follow-up treatment, shall be reported to the state health department.

FLORIDA

Personal.—Honorary memberships were conferred on Drs. Andrew P. Alhaugh, Tarpon Springs, John D. Peabody, St. Petersburg and Charles L. Jennings, Jacksonville, by the Florida Medical Association at its annual meeting in Jacksonville, April 30.——Dr. Leland F. Carlton, Tampa, was named president-elect of the Florida Railway Surgeons Association at its annual meeting in Jacksonville, April 30, and Dr. Walter C. Page, Cocoa, was installed as president. Dr. Edmund W. Warren, Palatka, for many years secretary-treasurer, was made a life member.

Society News.—Dr. Odis G. Kendrick, Tallahassee, was elected chairman of the Florida Crippled Children's Commission at its annual meeting, recently.——The Winter Haven Medical Society was recently created with Drs. Omer R. Alexander and Wiley T. Simpson as president and secretary, respectively.——Dr. Horton R. Casparis, Nashville, was the guest speaker at the annual session of the Florida Tuberculosis and Health Association in Jacksonville, April 30; his subject was "Prevention and Control of Tuberculosis."

ILLINOIS

Annual Clinic.—The Winnebago County Medical Society cooperated with St. Anthony's Hospital, Rockford, in sponsoring the fourth annual clinic at the institution in May. Speakers included the following physicians:

David S. Hillis, associate professor of obstetrics, Northwestern University Medical School, Chicago.
Robert A. Black, professor of pediatrics, Loyola University School of Medicine, Chicago.
Max S. Wien, assistant professor of dermatology, University of Illinois School of Medicine, Chicago.
Henry W. Meyerding, associate professor of orthopedic surgery, University of Minnesota Graduate School of Medicine, Rochester, Minn.
Aaron Arkin, associate clinical professor of medicine, Rush Medical College, Chicago.
Theodor Lang, pathologist of St. Anthony's Hospital.

Chicago

Dr. C. J. Herrick Becomes Professor Emeritus.—Charles Judson Herrick, Sc.D., chairman, department of anatomy, Division of Biological Sciences, University of Chicago, will become emeritus professor in July, having reached the retirement age. The administration of the department during the coming year has been referred to a committee consisting of George W. Bartelmez, Ph.D., Dr. Basil C. H. Harvey and Dr. Charles H. Swift. Dr. Herrick succeeded Dr. Robert R.

Bensley, who became professor emeritus in 1933 after holding the position since 1906. Both Dr. Herrick and Dr. Bensley will continue their research in the Hull Laboratory of Anatomy.

IOWA

Society News.—Dr. Edna K. Sexsmith, Greenfield, was elected president of the State Society of Iowa Medical Women at its annual meeting in Des Moines, May 8. Dr. Cora B. W. Choate, Marshalltown, is secretary.——At a joint meeting of the Pottawattamie and Woodbury County medical societies in Council Bluffs, May 29, Dr. George W. Koch, Sioux City, among other speakers, discussed "Duodenal Stasis."—— Dr. Frank W. Fordyce spoke on "Perforation of Peptic Ulcer" before the Des Moines Academy of Medicine and Polk County Medical Society, May 29, and Drs. Nevin Boyd Anderson and Dwight C. Wirtz on "Etiology of Goiter and Its Relation to Children in Des Moines" and "Some Factors of the Backache Syndrome," respectively.

KENTUCKY

Personal.—It is reported that Dr. John D. Jackson, Danville, has been named physician to the Kentucky School for the Deaf, Danville, succeeding Dr. Oscar L. May.——Dr. William R. Thompson, Lexington, has been appointed psychiatrist at the Central State Hospital at Lakeland. Dr. Thompson was formerly assistant superintendent of the Eastern State Hospital at Lexington but recently has been engaged in private practice.

Society News.—Speakers before the Lawrence County Medical Society, Louisa, May 3, were Drs. Walter E. Vest and Robert J. Wilkinson, Huntington, W. Va., on "Abscess of the Lungs" and "Cancer of the Breast," respectively; and Joshua B. Lukins, Louisville, "The Legal Aspect of Medicine."——Speakers at the semiannual meeting of the Fifth District Medical Society, Carrollton, May 10, were Drs. Isaac A. Arnold, on gas gangrene; David Y. Keith, radiology in general practice, and Louis Wallace Frank, uterine carcinoma, all of Louisville.——At a meeting of the Third District Medical Society, Bowling Green, April 18, speakers were Drs. Austin Bell, Hopkinsville; Harrison S. Shoulders, Hollis E. Johnson and Alfred Blalock, all of Nashville. All discussed aspects of tuberculosis.——Dr. John S. Boggess, Washington, D. C., presented a paper on "Menace of Human Defectives" before the Jefferson County Medical Society, June 18.

MASSACHUSETTS

Personal.—Dr. Hans Zinsser, professor of bacteriology and immunology, Harvard Medical School, will go to the University of Paris for the second half of the academic year 1934-1935 as exchange professor from Harvard.

University News.—During the annual meeting of the Massachusetts State Medical Society, a local committee sponsored a luncheon meeting of graduates of the University of Maryland Medical School, Baltimore Medical College and the College of Physicians and Surgeons, Baltimore, now residing in Massachusetts; about fifty of the more than 200 graduates of these schools now practicing in the state attended the meeting, the first one held in twenty years. It is planned to hold a similar meeting in Boston next year. Dr. Charles E. Gill, 8 Irvington Street, Boston, is secretary.

Library of Legal Medicine.—The George Burgess Magrath Library of Legal Medicine at Harvard Medical School was dedicated, May 23. Housed in the Faculty Club, the library is named for Dr. Magrath, medical examiner of Suffolk County, who is the first occupant of the chair of legal medicine at Harvard. This chair was established in 1932 by Mrs. Francis Gleffner Lee of Littleton, N. H., who is also the donor of the new library. The library will have 1,000 volumes of rare editions. According to the *New England Journal of Medicine*, it is the intention of the donor that it shall be the best collection of literature extant relating to the specialty.

MICHIGAN

Society News.—Dr. Howard H. Cummings, Ann Arbor, addressed the Monroe County Medical Society, April 19, on "Gynecology and the General Practitioner."——At a meeting of the St. Clair County Medical Society in Port Huron, May 15, Dr. Frederick C. Kidner, Detroit, discussed fractures.—— The Houghton County Medical Society was addressed in Houghton, June 5, by Drs. Harry E. Johnson, Redridge, and Frank F. Marshall, L'Anse, on "Mucin Treatment of Gastric Ulcer" and "Asthma: Etiologic Factors," respectively.—— Dr. Warren L. Babcock, medical director, Grace Hospital, Detroit, was elected president of the Michigan Hospital Association at the annual session, May 25.

MINNESOTA

Impostor Reinardy Sentenced.—Robert G. Reinardy, St. Paul, was sentenced by Judge Michael of the district court, April 27, to a term of not to exceed ten years at the St. Cloud Reformatory, following his plea of guilty to a charge of forgery in the second degree. For the past six months, Reinardy has been posing in St. Paul as a physician under the name of Dr. R. G. Brian. Using this name, he cashed a check for $9 in a grocery store. When the check returned from the bank marked "no account," the proprietress telephoned the state board of medical examiners for the address of Dr. Brian. Since there was no Dr. Brian registered under the basic science law, an investigation followed and resulted in Reinardy's arrest, April 16. A kit containing medicines and narcotics was found in his home. Reinardy admitted that he had cashed several checks and posed as a physician. He examined patients and furnished them with medicine, he said, but denied that he ever made a charge for his services. His sentence was stayed and he was placed on probation for three years. In addition, he was ordered to make full restitution for the checks he cashed, which, it was stated, approximate $465.

MISSOURI

Dr. Cowdry Gives First Charlton Lecture.—Edmund V. Cowdry, Ph.D., professor of cytology, Washington University School of Medicine, St. Louis, delivered the first annual Harry Hayward Charlton Memorial Lecture in anatomy at the University of Missouri School of Medicine, May 21. His subject was "The Significance of Nuclear Changes in Virus Diseases."

Society News.—Dr. Carliss Malone Stroud addressed the St. Louis County Medical Society, May 23, on "Diagnosis and Treatment of Certain Allergic Conditions."—— Drs. Higdon B. Elkins and George E. Grim addressed the Adair County Medical Society in Kirksville, April 5, on nephritis.——At a meeting of the Buchanan County Medical Society, May 2, Dr. Frederick Gregg Thompson, St. Joseph, discussed "Section of the Phrenic Nerve in the Neck."——Dr. William A. Fuson, Trenton, talked on "Sickle Cell Anemia" before the Grundy County Medical Society at Trenton, May 1.——Dr. Arthur E. Hertzler, Halstead, Kan., addressed the Jasper County Medical Society, April 24, on diagnostic problems of acute conditions in the abdomen.

NEW HAMPSHIRE

Discharge of Waste into Lake Prohibited.—The discharge of sewage at any point on the waters of Lake Winnipesaukee is prohibited under a recent regulation of the state board of health. There is a similar prohibition already in effect at Lake Paugus. This regulation applies to vessels, boats and other structures operating or maintained on the waters of these lakes.

NEW YORK

Dr. Hartman Goes to Ohio State University.—Frank A. Hartman, Ph.D., professor of physiology at the University of Buffalo since 1919, has accepted the professorship of physiology at the Ohio State University School of Medicine, Columbus, according to the New York *Times*, June 24. Dr. Hartman was awarded the Chancellor's Medal of the University of Buffalo in 1932, in recognition of his research on Addison's disease.

Personal.—The course in surgical methods in experimental biology to be held this summer at the Biological Laboratory, Cold Spring Harbor, will be directed by Dr. George W. Corner, professor of anatomy, University of Rochester School of Medicine and Dentistry, Rochester, instead of Edgar Allen, Ph.D., professor of anatomy, Yale University School of Medicine. Dr. Allen has had to change his plans on account of illness.——Dr. Charles M. Burdick has retired as superintendent of the Dannemora State Hospital for Criminal Insane, a position held since 1922.

New York City

Society News.—The Medical Society of the County of New York was addressed, May 28, by Dr. Abraham J. Rongy on "The History of Abortion"; Dr. Isador W. Kahn, "The Abortion Racket in New York City" and Reed B. Dawson, Esq., "The Legal Responsibilities of the Physician in Cases of Abortion."

Personal.—Dr. Sam Z. Levine has been appointed acting pediatrician in chief to New York Hospital and acting professor of pediatrics at Cornell University Medical College, succeeding Dr. Oscar M. Schloss, who recently became professor of clinical pediatrics and attending pediatrician to the

hospital.——Dr. Charles Gordon Heyd was recently appointed professor of clinical surgery and executive officer of the department of surgery of the New York Post-Graduate Medical School and not at Columbia University College of Physicians and Surgeons, as reported in THE JOURNAL, June 9, page 1949. Dr. Allen O. Whipple is executive officer of the department of surgery at the College of Physicians and Surgeons, professor of surgery and director of the department of surgery at Presbyterian Hospital.——The honorary degree of doctor of science was bestowed on Drs. Florence R. Sabin and Ludwig W. Kast by Syracuse University at the annual commencement, June 4. At the same time Dr. Livingston Farrand, president of Cornell University, received the honorary degree of doctor of laws. ——Dr. William Seaman Bainbridge, after twenty-one years' service, has been promoted to medical director with the rank of captain in the U. S. Naval Reserve.

NORTH DAKOTA

State Medical Election. — Dr. Archibald D. McCannel, Minot, was chosen president-elect of the North Dakota State Medical Association at the annual meeting, May 29. Dr. Clyde E. Stackhouse, Bismarck, was installed as president and Dr. Albert W. Skelsey, Fargo, was reelected secretary. The next annual session will be in Minot.

PENNSYLVANIA

Society News.—Drs. John T. Burnite and Josiah F. Reed addressed the Dauphin County Medical Society, Harrisburg, June 5, on "Modern Treatment of Sterility" and "Modern Contraceptive Methods."——Dr. Pascal Brooke Bland, Philadelphia, addressed the Harrisburg Academy of Medicine, June 19, on "Intracranial Damage of the New-Born."

Medical Alumni Day. — The University of Pittsburgh School of Medicine held its first homecoming day for alumni, June 2. More than fifty faculty members conducted clinics and at luncheon Dr. Ralph H. Boots, New York, of the class of 1915, made an address on "Medical Viewpoints Regarding Arthritic Diseases." The alumni also joined in the annual faculty dinner to the graduating class, at which Dean Raleigh R. Huggins presided and Dr. deWayne G. Richey, Pittsburgh, spoke on "Medical Traditions of Western Pennsylvania."

Philadelphia

Lowest Record for Typhoid.—Philadelphia had 105 cases of typhoid with twelve deaths during the past year, the lowest mark ever reached, the health department announced. In 1910 there were 1,745 cases with 272 deaths; in 1925 there were 234 cases with 45 deaths.

Hospital News. — Dr. Mitchell Bernstein was recently elected chief of medical service at the Jewish Hospital.—— Approximately 900 tuberculosis patients were cared for in general hospitals of Philadelphia during 1933, according to a survey made by the Philadelphia Health Council and Tuberculosis Committee; this marks a radical change from the former policy of general hospitals, which would not accept cases of tuberculosis until recently.

Personal.—Dr. Robert H. Ivy, professor of maxillofacial surgery, University of Pennsylvania Graduate School of Medicine, has been elected to membership in the Imperial German Academy of Natural Sciences.——Dr. Luther C. Peter received the honorary degree of doctor of science from Susquehanna University at the annual commencement, June 4.——The honorary degree of master of arts in medicine was conferred on Dr. Wilmer Krusen at the annual commencement of Hahnemann Medical College and Hospital, June 7; Dr. Krusen delivered the address of the occasion.

Faculty Changes at Jefferson.—Dr. Ross V. Patterson, dean of Jefferson Medical College since 1906, has been named Sutherland M. Prevost professor of therapeutics, succeeding Dr. E. Quin Thornton, who became emeritus professor of therapeutics. Other changes in the faculty include the following promotions:

Dr. Michael A. Burns, professor of neurology.
Dr. John M. Fisher, clinical professor of surgery.
Dr. John T. Brundage, assistant professor of pharmacology.
Dr. Robert M. Lukens, assistant professor of bronchoscopy and esophagoscopy.

At the annual alumni dinner, May 31, busts of Mr. Alba B. Johnson, president of the board of trustees, and of Dr. Patterson, the dean, were presented to the college. The graduating class of 1934 presented a portrait of Dr. J. Torrance Rugh, James Edwards professor of orthopedic surgery, to the college, April 27.

RHODE ISLAND

State Medical Meeting and Election.—Dr. Roland Hammond, Providence, was chosen president-elect of the Rhode Island Medical Society at the annual meeting, June 7, in Providence. Dr. Albert H. Miller, Providence, was installed as president and Dr. James W. Leech, Providence, was reelected secretary. The annual session for 1935 will be held in Providence, June 6. Speakers at this year's session were:

Dr. Frank M. Adams, Providence, Middle Ear Disease.
Dr. Frank S. Hale, Providence, Pernicious Vomiting of Pregnancy.
Dr. Clifton B. Leech, Providence, Use of Quinidine Sulphate in Heart Disease.
Dr. Esbe H. Windsberg, Providence, Total Removal of Right Lung for Bronchiectasis.

A symposium on diseases of the biliary system was presented by Drs. Irving J. Walker, Franklin W. White, William Richard Ohler and John B. Hazard, Boston. Senator Felix Hebert was the speaker at the annual dinner at the Metacomet Golf Club in the evening.

SOUTH DAKOTA

Personal. — Dr. Gustav A. Landmann, for twenty years mayor of Scotland, was recently reelected. —— Dr. John S. Tschetter has been named city commissioner of Huron, in charge of the public safety department.

TEXAS

Health at El Paso. — Telegraphic reports to the U. S. Department of Commerce from eighty-six cities with a total population of 37 million, for the week ended June 16, indicate that the highest mortality rate (21) appears for El Paso, and the rate for the group of cities as a whole, 10.3. The mortality rate for El Paso for the corresponding period last year was 11, and for the group of cities, 10.6. The annual rate for eighty-six cities for the twenty-four weeks of 1934 was 12.2 as against a rate of 11.6 for the corresponding period of the previous year. Caution should be used in the interpretation of these weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

GENERAL

Results of Board Examinations. — Sixty-one candidates were examined by the American Board of Obstetrics and Gynecology in Cleveland, June 11-12. Fifty were approved, ten were conditioned and one failed.

Eradication of Animal Diseases.—Plans for eradication of animal diseases were to have been launched the first part of June in twenty-four states and the District of Columbia. The activities will be a continuation, along intensified lines, of disease eradication programs conducted in the past by the bureau of animal industry and cooperating state and local veterinary officials. The states in which the work will be expanded first, largely in cattle tuberculosis eradication, are Arizona, Arkansas, California, Colorado, Georgia, Indiana, Iowa, Kansas, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Mexico, New York, Ohio, Oklahoma, Pennsylvania, Tennessee, Texas, Vermont, Virginia, Wisconsin, Wyoming and the District of Columbia.

Society News.—The American College of Physicians will hold its nineteenth annual clinical session in Philadelphia, April 29-May 3, 1935. —— Mr. Charles Frankenberger, librarian, Medical Society of the County of Kings and Academy of Medicine of Brooklyn, was elected president of the Medical Library Association at its thirty-sixth annual meeting in Baltimore, May 21-24, and Miss Frances N. A. Whitman, librarian, Harvard University, schools of medicine and public health, Boston, secretary. The next annual session will be held in Rochester, N. Y., in June 1935.——The Central Association of Obstetricians and Gynecologists will hold its fifth annual meeting in Milwaukee, October 5-7.

Sight Conservation Activities.—The National Society for the Prevention of Blindness recorded in its annual report, among other points, that five states are now requiring automobiles to be equipped with nonshatterable glass as a means of safety; that this type of glass has been perfected for use in spectacles; that the society has adopted a positive program in cooperation with other organizations of active promotion of education in prenatal care for syphilitic mothers; that in spite of curtailment of many activities in education, seventeen new sight saving classes were established during the year. A trial study of the causes of blindness among children in schools for the blind disclosed that many of these children might regain

sight through proper medical or surgical treatment, and the society in cooperation with the American Foundation for the Blind and the Committee on Statistics of the Blind is taking measures to provide treatment.

Physicians Requested to Safeguard Their Narcotics.—The Bureau of Narcotics of the U. S. Treasury has requested in connection with its annual report of thefts of drugs that physicians and druggists exercise greater precautions looking to a further reduction of these thefts. The number of thefts in 1933 was 831, considerably less than the number in 1932, but still large, especially when it is considered that all the drugs went into illicit channels, Acting Commissioner Louis Ruppel pointed out. All legitimate handlers of narcotic drugs are asked to store them under lock and key, preferably in metal cabinets or safes, since the check up of many thefts has shown that they were committed without trouble, owing to the use of wooden cabinets and unlocked cases. Legal purveyors were cautioned also against letting the government order forms issued to the drug trade and the medical profession fall into the hands of illicit traffickers and addicts. The greatest number of thefts were reported in the South and Southwest.

PUERTO RICO

Malaria Control.—The New York *Times* reports that a program of malaria control in Puerto Rico has resulted in an appreciable reduction in the death rate. In the first two months 51,000 patients were treated with quinine, which was purchased in sufficient quantity for 28,000,000 doses. Public school records showed that absences of children had been cut from 40 to 10 per cent.

CANADA

University News.—Dr. Charles H. Best, professor of physiology and assistant professor of hygiene and preventive medicine, University of Toronto Faculty of Medicine, gave a course of three lectures at University College, London, recently, on "Rôle of the Liver in the Metabolism of Carbohydrate and Fat."

Personal.—Dr. George J. Wherrett of the staff of the Fort Qu'Appelle Sanatorium, Fort San, has been appointed executive secretary of the Canadian Tuberculosis Association. He succeeds Dr. Robert E. Wodehouse, who was recently appointed deputy minister of health in the department of pensions and national health at Ottawa.

Celebration in Winnipeg.—In connection with a celebration of the fiftieth anniversary of the University of Manitoba, a "clinical week" was held by the medical school, May 14-19. Subjects handled in clinics included fractures, surgical emergencies, functional disorders of the nervous system, obstetric subjects, diseases of children and a medical symposium on digitalis therapy, anemias, essential hypertension and diarrhea in adults. Addresses were made at luncheon and in the evening by the following speakers, among others:

Dr. David A. Stewart, Ninette, Progress of Medicine in Fifty Years.
Dr. Norman M. Keith, Rochester, Minn., Essential Hypertension.
Dr. William Boyd, Winnipeg, The Gordon Bell Memorial Lecture.

FOREIGN

Dr. Martin Heads Pasteur Institute.—Dr. Louis Martin, nominal head of the Pasteur Institute since the deaths of Dr. Albert Calmette and Dr. Emile Roux last winter and chief of the serotherapy service, was officially appointed director by the institute board, May 16, the New York *Times* reported. He has been associated with the institute for forty years. Dr. M. G. Ramon, chief of the veterinary service of the Pasteur Institute at Garches, succeeds Dr. Calmette as under-director.

International Congress of Radiology.—The fourth International Congress of Radiology will be held at Zurich, Switzerland, July 24-31. Meetings will be held during the first four days at the University of Zurich and the Federal Institute of Technology. The Swiss Roentgen Society will entertain the delegates at a luncheon on the opening day; a festival of Swiss national costumes will be presented, July 27, and there will be a trip to St. Moritz, July 28. Dr. Hans E. Walther, Zurich, Gloriastrasse 14, is secretary of the congress.

British Prizes Awarded.—The Sir Charles Hastings Clinical Prize of the British Medical Association for 1934 has been awarded to Dr. Dulcie Helen Lukis, New Malden, for a study entitled "The Problems of Anesthesia in General Practice." The Katherine Bishop Harman Prize, awarded every second year for study and research in connection with risks apt to arise in pregnancy and childbirth, was presented to Prof. John M. Munro Kerr, Glasgow, for his clinical study "Maternal Mortality and Morbidity: A Study of Their Problems."

International League Against Cancer.—An International League for the Combat of Cancer was founded in Paris, March 24, 1934, at a meeting attended by representatives of thirty-two nations, it is reported. Former French minister Godart was elected president. It is planned to have a permanent office in Paris and to publish a yearly report. The league also plans to organize an international convention in Rome, probably for 1936, to seek international cooperation in the field of statistics and in the campaign against quackery and in exchange of literature.

International Conference on Tuberculosis.—The ninth conference of the International Union Against Tuberculosis will be held in Warsaw, Poland, September 4-6. Three subjects will be discussed: biologic variations of the tubercle bacillus, introduced by Professor Karwacki, Poland; tuberculosis of the bones and joints, by Professor Putti, Italy, and use and organization of tuberculosis dispensaries, by Prof. Leon Bernard, France. Americans listed for discussions are Drs. Esmond R. Long, Philadelphia; Clarence L. Hyde, East Akron, Ohio; James A. Miller, New York, and Berthold S. Pollak, Secaucus, N. J. Information may be obtained from the National Tuberculosis Association, 50 West Fiftieth Street, New York. A special party is being arranged to go from the United States, and for those who can leave in advance a trip to Russia is scheduled that will permit delegates to arrive in Warsaw in time for the meeting.

Personal.—Sir Robert McCarrison of the Indian Medical Service recently was awarded the prize of the Arnold Flinker and Julius Wagner-Jauregg Foundation of Vienna for a paper on the etiology of goiter which he delivered at the International Congress on Goiter in Bern in 1933. The prize, 2,000 Austrian shillings, had never before been awarded outside of Austria.——Dr. Edward Johnson Wayne has been appointed professor of pharmacology at the University of Sheffield. He will succeed Dr. Edward Mellanby, who was appointed in 1933, but was almost immediately afterward appointed secretary of the Medical Research Council following the death of Sir Walter Fletcher.——Dr. Hugh Crichton-Miller has resigned the directorship of the Institute for Medical Psychology, London. He was succeeded by Dr. J. R. Rees. Dr. Miller founded the institute.——Dr. Karl Frederick Wenckebach, emeritus professor of medical pathology and therapy at the University of Vienna, recently celebrated his seventieth birthday.——Dr. Andrew Hunter, professor of physiologic chemistry, University of Glasgow, has been elected dean of the faculty of medicine for 1934.——Dr. Farquhar Macrae, formerly lecturer in clinical surgery, University of Glasgow, has been appointed secretary of the Indian Medical Council, organized in 1933.——Lord Moynihan, emeritus professor of surgery, University of Leeds, and Sir Frederick Gowland Hopkins, president of the Royal Society and professor of biochemistry, University of Cambridge, received the honorary degree of doctor of laws from the University of St. Andrews at its graduation exercises, June 29.——Mr. Frank W. Ramsay, Bournemouth, president-elect of the British Medical Association, has resigned because of ill health and Dr. Sydney Watson Smith has been appointed to fill the office until the annual meeting of the association. A motion was also adopted to nominate Dr. Smith for president for 1934-1935.

Government Services

Memorial to Colonel Bruns Dedicated

The dedication of a portrait of Col. Earl H. Bruns took place in the Officers' Club of the Fitzsimons General Hospital, Denver, May 24. Col. Carroll D. Buck was chairman. Speakers on the program included Dr. Harry J. Corper, "Evolution of the Memorial"; Governor Ed C. Johnson, "Colorado's Appreciation"; Mayor George D. Begole, "Denver and Colonel Bruns"; Major William C. Pollock, "Colonel Bruns the Teacher"; Major Paul M. Crawford, "Colonel Bruns the Physician"; Col. Robert M. Hardaway, "Colonel Bruns and His Civilian Confrères"; Dr. Arnold Minnig, "Tributes"; Dr. Cicero L. Lincoln Jr., "Colonel Bruns' Contributions to Medical Literature." Dr. Henry Sewall presented the portrait to the tuberculosis service of the U. S. Army. The artist was Mr. J. I. McClymont. Colonel Bruns died in 1933.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 2, 1934.

The Development of Municipal Hospitals

The president of the Socialist Medical Association is Mr. Somerville Hastings, a laryngologist to the Middlesex Hospital, the ablest and most important of the small band of medical socialists. The London County Council has been captured by the socialists (not because London has become socialist but because of the apathy of a large part of the electorate), and Mr. Hastings is now chairman of the public health committee, which controls the biggest public health organization in the world and the huge municipal hospital system of 30,000 beds. Mr. Hastings' scheme for completely socializing the medical profession has been described in THE JOURNAL (February 24, p. 628). In opening a discussion at the annual meeting of the Socialist Medical Association (*Lancet*, May 26, p. 1136) on the "Present Scope and Future Development of Municipal Hospitals," he pointed out that recent legislation transferred the powers of "guardians of the poor," who maintained hospitals that were mainly infirmaries for the poor, to the local health authorities. The latter were empowered to establish hospitals, in the ordinary sense of the term, for the use of the inhabitants of their districts. The result was that a large number of authorities (including London) had appropriated the old poor-law hospitals and were running them as municipal hospitals. But Mr. Hastings thought it a disaster—naturally as a socialist he would—that the cost of maintenance and treatment for any disease, other than infectious, had to be recovered from the patient who could afford to pay. This severance from the poor law opened enormous possibilities of development, especially in urban areas. Specialization became possible; certain wards in one hospital could be set aside for the treatment of cancer by radium and roentgen rays; in another hospital for eye cases; facilities could be provided for thoracic surgery or bronchoscopic work in a third, and so on.

A local authority could not legally refuse admission to any destitute patient if his medical necessities demanded immediate hospital treatment. (This represents the old poor-law treatment.) Accordingly, the number of beds had to be the highest that could possibly be demanded. Consequently in the summer months a good many beds were vacant, which could be used for operations that were not urgent. A consultative outpatient department then became essential. There the local authority could carry out its tuberculosis, venereal disease and school clinics. Thus medical centers for the districts could be developed. This unification should prove of value for research and medical education. Instruction in fevers had long been given in municipal hospitals, and everything possible should be done to bring the stimulating and critical influence of students within the walls of all hospitals. There was nothing to prevent the development of medical schools in association with municipal hospitals. Mr. Hastings might have given the example of the Hammersmith Hospital, which, as described in previous letters to THE JOURNAL, is to be the hospital of the recently formed Postgraduate Medical School of London. This is a municipal hospital. It was not found possible to associate the school with any of the great voluntary hospitals, as they are medical schools fully occupied in undergraduate teaching. Mr. Hastings stated that these developments were increasing confidence in municipal hospitals, which were being preferred by many to voluntary hospitals. The public was beginning to feel that the hospitals belonged to them and that they could go there by right of citizenship and not as charity patients, and should anything go amiss they had the right to protest through their elected representatives.

Moving Roentgen Ray Pictures

At the Royal Society of Medicine, Dr. Russell Reynolds gave a remarkable demonstration of moving pictures taken of subjects exposed to roentgen rays. As long ago as 1896, within a few months of Roentgen's discovery, Dr. John MacIntyre demonstrated in Glasgow a film of the movement of the bones of a frog's leg taken with roentgen rays. But this was very large, and for human subjects the direct method, whereby a continuous film is substituted for the usual "still" picture, presents great difficulties. The method adopted by Dr. Reynolds is to allow the rays to produce their effect on a fluorescent screen in the ordinary way and then photograph this with a film camera. He has so simplified the apparatus that he was able to take a picture of a moving hand at the meeting and produce this fully developed at its close. By moving pictures the exact movements at a joint, whether healthy or diseased, can be studied and demonstrated to students. The movements of the heart and lungs are also shown in a form easy to study, and so are the movements of the alimentary canal after a bismuth meal. The possibility of linking up sound with the pictures has been considered. The movement and sounds of the heart might be recorded together and in this way some of the teaching with regard to what is heard with the stethoscope might be discontinued. At the same meeting Dr. R. Janker of Bonn gave a demonstration of moving roentgen ray films similarly produced.

The Reduction of Disease Among Milk Cattle

A committee appointed by the government to consider measures for reduction of disease among milk cattle, particularly of tuberculosis, has presented a report. The president was Sir F. G. Hopkins, the biochemist, and the members included such experts as Prof. E. P. Cathcart (physiologist), Dr. A. Stanley Griffith (pathologist and authority on bovine tuberculosis), and Prof. J. H. Jones.

DISEASE COMMUNICATED TO MAN

Bovine tuberculosis is responsible for more than 2,500 deaths annually in Great Britain, and for a still greater amount of serious illness. Undulant fever is rarely reported in Great Britain, but possibly it often passes unrecognized. About 100 outbreaks of epidemic disease, due either to mastitis in cattle or to subsequent infection of milk by those handling it, have been recorded in this country since 1903. The most important outbreak occurred at Hove in 1929, when 1,000 families were affected and sixty-three deaths occurred. The committee recommended that routine veterinary inspection should be made obligatory for all local authorities. The veterinary service should be expanded under the immediate control of local authorities, but with coordinating powers of the department of agriculture. The veterinary officers should be responsible for eradication of disease and should do the tuberculin testing for the purpose of milk designation.

THE ERADICATION OF TUBERCULOSIS

This scheme, which will require the active supervision of the Ministry of Agriculture, should provide for the following: 1. A list of tuberculosis-free herds, tested with tuberculin from time to time under official supervision. 2. Free advice and free tuberculin-testing for owners who agree to make bona fide efforts to free their herds from tuberculosis, or who have established free herds. 3. Financial help where necessary by way of loans to approved owners for expenditure required by the veterinary inspector as necessary to eradication. 4. Securing to owners of disease-free herds of a higher price for their

milk. 5. Measures to secure tuberculosis-free cattle being moved about and exposed for sale without the risk of contact with other cattle. 6. All milk should be sold under an official designation and should attain a fixed standard of cleanliness. It should conform to one of the following designations: (*a*) "Certified milk"—which has not undergone any heat treatment and is derived from tubercle-free herds. This milk should not be required to be bottled at the farm. (*b*) "Pasteurized milk"—which has undergone once only a process of approved heat treatment in a plant licensed for the purpose. (*c*) "Sterilized milk"—which has been raised to the boiling point or higher in a licensed plant. (*d*) "Uncertified milk"—which has undergone no heat treatment and is not derived from tubercle-free herds but attains a certain hygienic standard.

Increase in the Number of Physicians

The Medical Register at the beginning of the present year contained 56,741 names, the largest ever reached, and 340 students more than last year had registered their names. At the session of the General Medical Council of Medical Education and Registration Sir Norman Walker in his presidential address quoted these figures and reminded the council that its first object was to improve medical education. The boundaries of medicine were ever extending, and the last twenty years had seen even greater and more rapid changes than those that had led to the passing of the Medical Act of 1886. The council could not, however, frame a model curriculum which would suit every country and every school, and a hard-and-fast arrangement of subjects was impossible even if desirable. Each licensing body was free to try out new methods, and those found successful were likely to be imitated and perhaps improved on by others. Other countries did not realize how much we gained from our unique system of external examiners (examiners drawn from outside medical schools). The meeting at the council of teachers from different schools was perhaps the most efficient way of diffusing information.

The Effect of Noise on Work

The efforts to deal with the noise evil, produced by machinery in modern civilization, especially by automobile traffic, have been described previously (THE JOURNAL, Oct. 21, 1933, p. 1325; Oct. 28, 1933, p. 1402). The Anti-Noise League was formed, with the support of prominent physicians, for the purpose of inducing the authorities to regulate by law forms of noise that are manifestly injurious to the community. Lord Horder, chairman of the Anti-Noise League, presided at a lecture on "Research into the Effects of Noise on Work," delivered at the National Institute of Industrial Psychology by Prof. F. C. Bartlett, director of the Psychological Laboratory of the University of Cambridge. Professor Bartlett said that the world became more and more full of noise each year. In almost every civilized country committees were appointed to investigate what was called "the menace of noise," and the facts about noise were slowly accumulating. Noise might be defined as any sound which was treated as a nuisance, and the qualities of any particular sound depended largely on the background against which it was experienced. But certain characteristics of sound made them attract attention on almost any background. The most important were loudness, ambiguity of direction and unfamiliarity. It was only in certain special occupations that there was any evidence of serious damage to hearing by noise. The boilermaker working inside a boiler might have to endure a loudness considerably greater than anything used in experiments on human beings. Moreover, many of the constituents of the noise were of high frequency, so that their loudness was greatly amplified. That continued exposure might produce middle-ear inflammation and lead to permanent deafness seemed certain. Some other industries might produce more or less similar effects, but except for highly specific tasks no convincing case could be made out for loss of hearing. But there were other ill effects of loud sounds. The pneumatic drill, the hoot of the automobile, or the rattle of a busy city street might deafen nobody, but they masked sounds more important to the individual, such as conversation, and so produced irritation. Masking was a physical effect, but its reaction on work was psychologic. It slowly piled up annoyance and a feeling of defeat and so became a real enemy.

PARIS

(From Our Regular Correspondent)

May 9, 1934.

The Medical Congress of Tunis

A congress devoted to the study of medical questions pertaining to the French protectorates of northern Africa was held at Tunis under the chairmanship of Prof. Charles Nicolle, now professor at the Collège de France in Paris but for many years director of the Institut Pasteur in Tunis. Many French physicians crossed the Mediterranean for the occasion—also several Italian physicians. The meeting, which was organized by the North African medical group, was presided over by Dr. Brun, director of the Hôpital Sadiki at Tunis. The crusade against syphilis was the subject of papers by Colombani and Lepinay of Morocco; A. Lacroix and Colonieu of Algeria, and Mazéres, Raynal and Louis Chauvin of Tunisia. Everywhere may be observed the effects of the crusade undertaken against Spirochaeta pallida by the French physicians. In Morocco, the mutilating tertiary types are becoming more uncommon. In Algeria the number of antivenereal centers is increasing constantly (7 in 1928, 156 in 1930, and 178 in 1933). Here prostitution is the most dangerous factor. In the rural districts, fatalism among the Mussulmans is a serious obstacle to the publicity campaign in favor of energetic treatment. Tunisia seems to be the country the best organized to combat venereal disease. The antivenereal equipment of Tunisia includes, at present, numerous detection and treatment centers for syphilis, not only at Tunis, where there is an excellent dispensary, but also in all the cities of the interior. The number of doses of spirillicidal drugs, supplied gratuitously by the hygienic services, has risen from 11,551 in 1923 to 149,486 in 1932. At the same time, the expenditures have risen from 50,000 francs ($3,250) in 1923 to 534,300 francs ($34,729) in 1932.

Eye conditions associated with congenital syphilis, so frequent in northern Africa, have been the subject of a research by Cuénot and Nataf, based on observations extending over nearly forty years and on 300,000 observations of patients, half of which were natives. The authors employ mercury salts in preference to arsphenamines, which latter are used only when there are no changes in the deep membranes of the eye nor in the optic nerve. They reject pentavalent arsenicals entirely.

Arsenotherapy in the treatment of dementia paralytica and tabes was the second topic on the program and was presented by Dr. Cassar, director of the Tunis prophylaxis center. The Mussulman of Tunisia seems to have developed an immunity of his central nervous system toward attacks of Spirochaeta pallida. Tabes and dementia paralytica are rare. The treatment with arsphenamines, applied since 1919, has not changed the nature of syphilis as it appears in the natives. The baneful effects of inadequate treatment with arsphenamines, which are observed in the European in the form of manifestations of unapparent neurosyphilis, detectable by examination of the cerebrospinal fluid, are not found in the natives of Tunisia.

In addition to numerous special communications presented by physicians of France and Africa, several lectures were given. Professor Porot of Algiers spoke on the new ideas concerning the disorders of the cerebral circulation; Dr. Sabouraud of Paris, on physicians as they disport themselves in fields outside of medicine; Professor Morax of Paris, on dermo-epidermic

grafts; Professor Debré of Paris, on tuberculosis in the child; Dr. Diacono of Tunis, on the serologic problem of hemolysis; Dr. Deschamps, on arteritis obliterans. In closing, Oran (Algeria) was chosen as the place of meeting for next year, and Professor Abadie was elected chairman.

The Congress of Lyons

A meeting of physicians of French hot springs and climatic resorts was held in Lyons. The attendance was large, as it was in association with Easter holidays. The study of heat treatment as applied to rheumatism, as defined for the first time at Lyons by Poncet, was the chief purpose of the meeting. Heat treatment as applied to respiratory disorders was a second topic. A somewhat new subject was touched on in several papers; namely, the pathogenic rôle of the humidity of the atmosphere, a subject especially fitting for Lyons, which, being situated at the confluence of the Rhone and the Saône, has a higher humidity than almost any other city of France. The days without a trace of rain are rare in Lyons. Mr. Boudry of La Bourboule considered the question from the physiologic point of view. Mr. Causy gave his views on the mechanism of the cause of pain by damp weather. The second day was devoted to a discussion on renal tuberculosis.

Experimentation on Man

In reviews of a rather more literary than medical tone, Professor Nicolle is publishing a series of articles on medical philosophy, characterized by perspicacity and containing conclusions of a life devoted entirely to experimentation. His articles are creating a sensation, as did also his book on the destiny of infectious diseases, in which he predicted the disappearance of certain diseases and the possible appearance of new ones. In this new series of articles he is considering the right to experiment on man. He energetically denies such a right, even on criminals. Human life should be sacred to man. One has not even the right to jeopardize one's own life. If Pasteur had inoculated himself first with rabies and the experiment had failed, it would have been a disaster for humanity. This having been said, and just at the moment when he would seem to have succeeded in convincing the reader of the truth of his statement, he admits that experimentation on man has been practiced since time immemorial and that every trial of a new medicine, a new serum, a new anesthetic, a new operative method is, essentially, experimentation, with merely the attenuation that it has always been preceded by trials on animals. But there are many instances in which conclusions based on trials on one species are not a priori applicable to other species, notably the human species. There is still a ravine to be crossed, and Nicolle reaches the conclusion that only the scientist is entitled to cross it, in the calmness of his conscience, after having weighed all the responsibilities and eventualities and having decided that the problem to be elucidated is of cardinal importance for humanity and can be solved in no other way. From this conception, to all appearances contradictory, the conclusion appears to be reached that the scientist, having no selfish interests and placed at the front of human progress, has rights belonging only to himself, which it behooves mankind to recognize. This conclusion appears somewhat strange, and Mr. Nicolle states that he would not have adopted it if it had not been the only one possible, if the question was to have any issue.

The Academy's Oldest Member

Dr. Guéniot, formerly obstetrician to the hôpitaux de Paris and past president of the Academy of Medicine, has completed his 102d year. His health is excellent, and he continues to carry on his studies in his library. He has presented to the Academy the two volumes that he recently published: "Observations on Birds, Insects and Plants," and the third edition of the work "How to Live to Be One Hundred Years Old."

BERLIN

(From Our Regular Correspondent)

May 7, 1934.

Genes, Chromosomes and Tumors

Prof. K. H. Bauer of Breslau discussed recently the subject of hereditary biology in relation to tumors. He emphasized that at the beginning of every tumor blastoma cells develop. They originate from body cells, but modification of the cells cannot lead to tumor cells. Crossing has not been demonstrated, but a mutation of the gene can be assumed with a high degree of certainty, just as such mutation can be held responsible for the origination of hereditary diseases (multiple exostoses, xeroderma pigmentosum). The assumption that mutated genes are the substantial carriers of tumor qualities can be shown by the fact that the tumor cells give evidence not only of new but also of old functions in some form or other. A retrogression of mutation cells never occurs. Metastases and recurrences show the contamination or the remnants that support the mutation. Not every mutated body cell becomes a tumor cell, but every tumor cell is a mutated body cell. The peak of cellular division and the places of increased usage are chiefly involved. All influences that disturb the processes of regeneration further tumor formation. Examinations of tumor cells show abnormal conditions with respect to the chromosomes. In some cells, from 95 to 100 chromosomes (basic number 48) were demonstrated. In malignant tumors multiple mitoses were observed. The modifications in the number of the chromosomes furnish the stimulus for the new formation and for growth. Experimentally the agents that are employed biologically for the production of mutation in germ cells may be applied to tumor cells. Roentgen irradiation may cause roentgen carcinoma or sarcoma; likewise, radium may produce carcinoma and sarcoma in plants and animals, and arsenic may produce them in plants. As an indication of the influence of ultraviolet light, it may be stated that skin cancer in man develops only in surfaces exposed to the light. An increased incidence was observed on the skin of mariners and inhabitants of the rural regions. Tumors are a problem of the genes and the chromosomes. The therapeutic effects of roentgen rays are based on their influence on the make up of the genes. The frequency of tumors in man depends on the negative selection. The present longer duration of life leads to marked aging of the tissues and thus to carcinoma in aging persons.

Modern Work Methods

The Kaiser Wilhelm-Institut für Arbeitsphysiologie held recently a working session in Dortmund. Prof. Dr. Glum, general director of the Kaiser Wilhelm-Gesellschaft, Berlin, explained that if Germany is to hold its own against other countries, increased importance must be laid on the highest quality of work. "We are seeking the best working methods. We are gathering experience that we may apply it in a truly social sense. Improvements in machines and apparatus are devised and tested, and our name has become known throughout the world."

A phase of the work is research on the best methods of saving the working strength of creative man, in order to preserve for him his defense forces for life in this machine age. Just what methods should be employed to accomplish this, it is the purpose of this session to discover.

Prof. Dr. Atzler, director of the institute, introduced to the audience some of the problems of the physiology of work, the objective of which is to shape the industrial work of man in accordance with his capacities. Through years of energetic though quiet research, the weapons have been forged with the aid of which the burdens of mankind can be lightened. The maximum burden of work for juveniles, how to preserve the workman's working capacity as he grows older, and the best

methods to employ to strengthen the human body, such as have proved useful of late in the emergency field work service, have been ascertained through scientific research. Germany entails a loss of time and money from pneumonoconiosis in miners, amounting to 4,500,000 marks ($1,710,000) each year. It has been learned that susceptibility to this disease depends to a great extent on the individual structure of the nose, so that, with the aid of an ingenious apparatus, the susceptibility of applicants for work in the mines can be determined.

Prof. Dr. Kraut made some observations on the nutrition of workmen. Since the beginning of the economic crisis the food question among workmen has been serious. The decline in the quality of the diet is so marked that, along with other damages, there has been a reduction of working capacity. An improvement is expected primarily as a result of the measures adopted by the government and the large industrialists for the betterment of the employment situation. Greater knowledge and care in choosing the proper foods are needed. In recent studies on the food problem among workmen, a lack of high-grade animal protein was evidenced, which condition can be improved with the means already at hand. The chief recommendation is an increase of milk consumption.

Attention was called also to the endeavor, by systematic research, to improve the quality of hand work so that it will be better able to compete with machine work. The form of tools used today is, to a great extent, determined by tradition rather than practical usefulness.

Heart Patients and Sport Activities

The question is often raised as to whether heart patients must renounce all participation in sports. Professor Unverricht, the director of the third Medizinische Universitätsklinik in Berlin, gives his views in the *Münchener medizinische Wochenschrift*. He takes the attitude that each individual patient must be considered separately. The desires of the patient must be considered, lest, by general prohibitions, a feeling of complete physical inferiority be induced. By careful measurement of the permissible physical activities the compensation processes demanded by the circulation of the patient with heart defects can be provided for. Thus the general capacity can be strengthened and the joy of living in such persons can be restored. Unverricht reached this conclusion on the basis of observations on juvenile patients who had been affected with mitral insufficiency, mild mitral stenoses, aortic insufficiency or mild aortic stenoses, although they presented no severe subjective symptoms. Exercising the greatest caution, he permitted the patients at first to perform passive movements and then to participate in active gymnastic exercises; finally he allowed them to engage in running, swimming, skating and paddling. He always introduced a mild form of exercise to reduce the tension and to relieve the strain, and he took care to provide also for adequate periods of rest. Before beginning a new form of exercise, the patients were required to participate in deep breathing. Every muscular movement furthers the blood circulation and lessens peripheral disturbances. It is true that the burden of the heart will be increased by the augmentation of the stroke volume. Exercise exerts a favorable influence also on the blood vessels; for they become thereby adapted to the performance of increased labor. Possibly the muscularis of the vessel walls will be strengthened and the venomotor performance will thereby be increased. Thus a compensation process has been consciously introduced; for exercise of the heart and the blood vessels is especially important for patients with heart defects to establish a reserve force in the event of a sudden increased demand on the circulatory system, whether in the form of a suddenly necessary physical exertion or to resist an attack of fever (infectious diseases).

In the changes in the size of the heart brought about under the influence of physical exercise, the play of the capillaries is important; that is, the development of the adaptability of the capillaries in the muscles and in the skin; hence, the evident value of air baths combined with physical exercise. Through stimulation of the skin, air baths have a tonic effect and increase the well being of the patient. Exercises requiring the exertion of one's strength to the limit, such as running or swimming a certain distance within a prescribed space of time, were permitted only after completion of an adequate period of training. When the performance was increased slowly, there was never any essential enlargement of the heart. Great care was taken not to allow the patients to overexert themselves. They were supervised most carefully. No further accentuation of the exercises was permitted when any disturbances resulted, such as disturbed sleep, loss of appetite, mental depression, fatigue, irritability, or the like, symptoms that can be regarded as signs of beginning circulatory weakness and that are seen as fatigue manifestations, even in healthy sport adherents, after an exaggerated course of training. In the cases mentioned, a lowering of the blood pressure value, such as occurs in healthy persons who overexert themselves, was frequently observed. The physician must be personally familiar with the various forms of bodily exercise. The critical task of the physician is to apply to other constitutions his personal experiences, which are of course influenced by his own capacity to perform and his own bodily constitution, and to estimate the capacity of the patient's organism to react to various sport activities. If patients take a stubborn attitude and show an inclination to make records for themselves at any cost, the experiment, as far as they are concerned, should immediately be discontinued. In dealing with heart patients it must constantly be emphasized that the quality of the performance, from the point of view of speed and skill, is a secondary matter.

The Combating of Tuberculosis

A new Prussian law establishes stricter regulations for combating tuberculosis. Heretofore only contagious cases of pulmonary and laryngeal tuberculosis and deaths from these disorders were notifiable; now every death from tuberculosis of any form must be reported, and also every case of tuberculosis of the skin. The notices are to be given to the health officer within one week in the event of illness and within twenty-four hours in case of death. The old regulations provided further that the householders' control committee must report to the proper station any change of residence of such a patient. The new regulations require that any change of residence of a suspected person also be reported. In fact, in general, the new regulations place more emphasis on the suspected patient; for example, they provide that suspected persons may be included in the care-taking measures established for the tuberculous.

The Excess of Females

Before the war there were in Germany 1,029 females to each 1,000 males. After the war this relationship was greatly changed, there having been 1,101 females to each 1,000 males. Gradually, however, the disproportionate number of females has been remedied and recent statistics place the relation at 1,059 females to 1,000 males, while the excess number of male births (1,000 girls to 1,055 boys) appears to be bringing about a further betterment. The present excess of females over males ranges around 1,900,000 and is found almost exclusively in the cities. The excess is largest in Berlin; namely, 1,169 females to 1,000 males. In rural communities the proportion is 1,002 females to 1,000 males, and in many small communities a considerable excess of males may be found. The older age groups present the highest excess of females.

BELGIUM

(From Our Regular Correspondent)

April 26, 1934.

The International Association of Preventive Pediatrics

The third conference of the Association internationale de pédiatrie préventive was held in Luxemburg, under the chairmanship of Mr. Rischard, assisted by Professor Taillens of Lausanne and Mr. Daniel Oltramare of Geneva. The first topic, "The Prophylaxis of Infantile Paralysis," was presented by Messieurs P. Rohmer and de Willemin-Clog of Strasbourg, who suggested the following: Early detection and isolation (and specific treatment) of all cases of poliomyelitis, including the abortive cases. Prophylaxis applied to all the children by means of convalescents' serum or the blood of adults. In time of epidemics, the creation of a central medical organization for the application of preventive measures; disinfection measures; sanitary supervision of the sale of food products. Measures to prevent the dissemination of infection: prohibition of all public gatherings. Compulsory notification of the disease, also of sporadic cases, in all countries.

Prof. Arvid Wallgren of Göteburg pointed out that the infective agent in poliomyelitis appears to have a wide distribution. Its distribution is more widespread than the frequency of the disease would lead one to suppose. The infection provokes but rarely clinical symptoms. In this respect, poliomyelitis resembles to a certain extent the chronic infectious type of tuberculosis. The prophylactic measures may be divided into two kinds: those designed to prevent contagion and those directed toward the prevention of the disease by persons exposed. Prophylaxis of exposure has two principal tasks to perform (*a*) checking of the dissemination of the infective agent, and (*b*) prevention of the reception of the infective agent by man. The fact that only a small proportion of the persons exposed come down with the disease shows the great importance of predisposition with regard to the consequences of an infection. Resistance to the disease depends on (*a*) certain specific factors of biologic immunity and (*b*) certain constitutional and physiologic factors.

The congress reached the following conclusions: Since infantile paralysis is due to a micro-organism that is still unknown, there are still many obscure points in its etiology; consequently it is difficult to adopt categorically certain prophylactic measures. The little that is known appears, however, to justify the following attitude: infection may develop either by direct contact from child to child or through the mediation of nonparalyzed but nevertheless infected patients or of healthy germ carriers, or, from water or certain foods; more particularly, milk and milk products. In case of epidemics, one should apply the following measures:

1. Compulsory notification of the disease, including sporadic cases, should be introduced in all countries in which such a provision is lacking.

2. It is recommended that the organization of the crusade be intrusted, in case of an epidemic, to a medical service specially created for this purpose, in charge of a qualified physician who will decide on the measures to be taken and will direct their application. He should collect from the infected area all items of information gathered during the epidemic, with a view to their future scientific utilization. He should attach to himself a number of competent physicians and should offer the service of this body to the medical corps to aid in the detection of cases and the application of treatment, including prophylaxis.

3. The first measure to be applied is the early detection and isolation of all cases (including those of the abortive type) under the best possible conditions. Provision should be made for the disinfection of dwellings, personal belongings and excrementa.

4. All necessary measures should be taken to prevent dissemination of the disease by water, milk and foods; special attention should be given to the supervision of commerce in food products.

5. Since in epidemics the infection appears to extend to the major part of the population, it is recommended that specific seroprophylaxis be studied and possibly applied in some form that the present status of science places at our disposal. It is advisable that large supplies of convalescents' serum, and possibly of other specific serums, be kept on hand in certain centers.

6. Germ carriers are, in the opinion of most authors, numerous in the infected regions and may be regarded as an important source of infection. Public assemblages of all kinds that might bring about a contact of persons of other regions with the inhabitants of the infected region should be prohibited. In the region invaded by the epidemic, camps and vacation colonies for children coming from other sections should not be established. With the same object in view, all movements of nomadic groups should be prevented. These principles should be kept in mind also in the movements of troops.

7. With regard to closing theaters, schools, consultation centers for mothers and infants, and the like, it is impossible to establish uniform rules. It is advisable to regulate these matters according to the special conditions surrounding each epidemic.

Prevention of Acute Disorders in the Nursling

The second topic before the conference was "Prophylaxis of Acute Specific Disorders in the Nursling." Professor Rott of Berlin presented a paper on "Significance, from the Social Hygiene Standpoint, of Influenza in Preschool Children." Prof. G. Frontali of Padua spoke on "Prophylaxis of Influenza in Early Childhood." The following conclusions were accepted by the congress: For the prophylaxis of acute disorders of the respiratory passages, associated with seasonal or epidemic influenza of early childhood, two kinds of measures are proposed:

MEANS OF AVOIDING CONTAGION

Means of avoiding contagion: In groups of children under institutional care, in cubicles, after rigorous elimination of all notified cases of other infectious diseases; the creation, in waiting rooms of consultation centers for children, of smaller apartments making it possible to keep children separate before consultation. Application to the infant wards of modern methods of air conditioning and the maintenance of a suitable temperature at all seasons of the year. All members of the personnel to report at once the slightest rhinopharyngeal disorder. The use by the personnel of a simple mask, at least with the appearance of the first symptoms, and the regular examination of the personnel to exclude from service all cases of influenza as soon as they appear. The application of these measures to every person coming to visit the children, and, if possible, the rule that children may be seen only through a glass partition. Impressing on the mothers the importance of their own rhinopharyngeal disorders from the beginning, for the health of the children, and the value of their wearing a protective mask when they nurse and care for the child.

MEANS TO STRENGTHEN A CHILD'S RESISTANCE TO RESPIRATORY INFECTIONS

While still seeking means of immunization, one must not rely too much on their action in the present state of our knowledge of chemical agents. An endeavor should be made to acquire a better knowledge of the influences of weather. The physician should be instructed as to the importance of a well adapted diet, with emphasis on breast feeding, and, if that is impracticable, the need of a complete and well balanced diet. Lyons was selected as the meeting place for the next session.

Marriages

HENRY KELSO CUNNINGHAM, Knoxville, Tenn., to Miss Marie Russell Nininger of Roanoke, Va., June 9.

HERBERT E. MOORE to Miss Margaret Wixstrom, both of Birmingham, Mich., in May.

JOSEPH F. CARROW, Cadillac, Mich., to Mrs. A. L. Dryer of Marion, June 3.

HARVEY GARRISON JR., Jackson, Miss., to Miss Merideth Owens, April 25.

CLYDE JOHN GEIGER to Miss Frances Terry, both of Chicago, May 26.

Deaths

Joseph John Meyer ● Johnstown, Pa.; Jefferson Medical College of Philadelphia, 1915; past president and secretary of the Cambria County Medical Society; member of the House of Delegates of the American Medical Association in 1931; served during the World War; on the staff of the Municipal Hospital and formerly on the staffs of the Conemaugh Valley Memorial and Mercy hospitals; editor-in-chief of the *Medical Comment;* aged 41; died, May 8, of lobar pneumonia.

Robert Lewis Richard ● Santa Barbara, Calif.; Medical College of Ohio, Cincinnati, 1894; member of the American Psychiatric Association; was appointed assistant surgeon in the M. C., U. S. Army, in 1903, promoted to captain in 1908, and resigned in 1912; at one time lecturer in psychiatry at the University of California Medical School, San Francisco; formerly superintendent of the Mendocino State Hospital, Talmage; aged 64; died, May 25, in Los Angeles.

Charles McPherson Curtis, College Park, Ga.; Southern Medical College, Atlanta, 1887; member of the Medical Association of Georgia; formerly mayor and councilman of College Park; for many years member of the school board and the Georgia Military Academy; aged 68; died, May 6, of heart disease, following an operation for appendicitis.

Alexander Marcy Jr., Riverton, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1881; member and past president of the Medical Society of New Jersey; member of the House of Delegates of the American Medical Association in 1905 and 1911; formerly bank president; aged 75; died, May 1.

Robert Wallace Hardon ● Chicago; Harvard University Medical School, Boston, 1893; for many years professor of general and orthopedic surgery, Post Graduate Medical School; aged 68; died suddenly, June 1, in the Post Graduate Hospital, of heart disease, following an operation on the gallbladder.

Mary Biddle McCollin Tatum, Radnor, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1889; aged 66; senior member of the board of managers of the Woman's Hospital, Philadelphia, where she died, May 10, of acute suppurative appendicitis with peritonitis.

Carl Richard Wagner ● Pasadena, Calif.; Rush Medical College, Chicago, 1921; fellow of the American College of Surgeons; on the visiting staff of the Pasadena Hospital; aged 36; died, June 8, in a local hospital, of injuries received in an automobile accident.

Harvey H. Martin ● La Porte, Ind.; Chicago Homeopathic Medical College, 1895; fellow of the American College of Surgeons; served during the World War; surgeon to the Holy Family and Fairview hospitals; aged 62; died, May 27, of heart disease.

Charles Henry Francis O'Neill, New York; College of Physicians and Surgeons in the City of New York, Columbia University, 1894; member of the Medical Society of the State of New York; aged 64; died suddenly, May 10, of heart disease.

Paul Elias Kuhl ● Trenton, N. J.; University of Louisville (Ky.) School of Medicine, 1907; on the staff of the Mercer Hospital; aged 50; was found dead, April 19, of illuminating gas poisoning, self-administered.

Mary Pearlee Manning, Hamilton, Ohio; Miami Medical College, Cincinnati, 1904; member of the Ohio State Medical Association; public school physician; aged 70; died, April 11, of pneumonia.

Horatio Pilkington, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1879; member of the Medical Society of the State of Pennsylvania; aged 78; died, March 1.

Thomas Wayne King, Lamoni, Iowa; Ensworth Medical College, St. Joseph, Mo., 1905; served during the World War; aged 53; died, March 28, of a skull fracture received in a fall.

Charles W. Miles Sr., Union City, Tenn.; University of Louisville (Ky.) School of Medicine, 1872; formerly member of the board of education; aged 85; died, May 9, of pneumonia.

Thomas Maxwell Toler, Washington, La.; Tulane University of Louisiana Medical Department, New Orleans, 1903; aged 61; died, in April, of heart disease.

Oliver Perry Jamison, Leon, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1905; aged 54; was found dead, April 6, of heart disease.

Richard Henry Crisler, Burlington, Ky.; Long Island College Hospital, Brooklyn, 1875; aged 86; died, May 6, in Cincinnati, of myocarditis.

Hans Herbert Johnston, Los Angeles; New York Homeopathic Medical College and Flower Hospital, New York, 1915; aged 47; died, March 30.

Vilda Isidore Groulx, Port Hope, Ont., Canada; University of Bishop College Faculty of Medicine, Montreal, 1888; aged 71; died, in March.

Hugh Custer Arey ● Excelsior, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1902; aged 55; died, May 20.

Otto Louis Prien, Denver; University of Colorado School of Medicine, Denver, 1919; aged 51; died suddenly, May 7, of cerebral hemorrhage.

Adoniram Judson Parker, Tacoma, Wash.; University of Michigan Medical School, Ann Arbor, 1883; aged 80; was found dead, April 16.

Farris Lucius Jackson, Athens, Ga.; Meharry Medical College, Nashville, Tenn., 1917; aged 39; died suddenly, March 27, of heart disease.

John F. Schmershall, Jerome, Idaho; Hahnemann Medical College and Hospital, Chicago, 1904; aged 58; died, May 2, in Santa Cruz, Calif.

John Calvin Snyder, Newark, Ohio; Rush Medical College, Chicago, 1891; aged 81; died, May 11, of osteosarcoma of the upper jaw.

Samuel L. Witham, Fortville, Ind.; Medical College of Ohio, Cincinnati, 1879; aged 84; died, May 7, of parenchymatous nephritis.

Samuel Petersky, Vancouver, B. C., Canada; McGill University Faculty of Medicine, Montreal, 1906; aged 50; died, February 16.

Austin Flint Townsend, Daleville, Ala.; Medical College of Alabama, Mobile, 1893; aged 63; died, April 7, of cerebral hemorrhage.

Ames Wilsworth Slate, Indian Orchard, Mass.; Harvard University Medical School, Boston, 1900; aged 59; died, May 11.

Lee Washbon Prescott ● Sloan, Iowa; State University of Iowa College of Medicine, Iowa City, 1905; aged 52; died, May 5.

Otto Ignatius Rebescher, Buffalo; University of Buffalo School of Medicine, 1910; aged 52; died, April 25, of angina pectoris.

Robert Terry, Gumbo, Mo.; Barnes Medical College, St. Louis, 1898; aged 69; died suddenly, March 26, of heart disease.

Henry George William Reinhardt, Muscle Shoals, Ala.; Rush Medical College, Chicago, 1897; aged 65; died, May 9.

Thomas H. Wilson ● Chicago; National Medical University, Chicago, 1903; aged 66; died, March 2, of heart disease.

Evert Rodenhuis, Corsica, S. D.; Detroit College of Medicine, 1895; aged 70; died, March 5, of arteriosclerosis.

John Robert Moon, Eagleville, Tenn.; University of Nashville Medical Department, 1878; aged 80; died, April 11.

Frank P. Klahr, Algona, Iowa; Eclectic Medical Institute, Cincinnati, 1875; aged 84; died suddenly, April 24.

James T. Jarrett, Roanoke, Va.; University College of Medicine, Richmond, 1898; aged 62; died, April 1.

William H. Damon, Los Angeles; Dearborn Medical College, Chicago, 1904; aged 61; died, April 28.

Alonzo H. Ralston, Fredericksburg, Ind.; Louisville (Ky.) Medical College, 1897; aged 74; died, May 1.

Levi E. Reck, Piqua, Ohio; Medical College of Ohio, Cincinnati, 1891; aged 67; died, April 15.

L. G. McElhany, Success, Ark. (licensed in Arkansas in 1923); aged 57; died, April 13.

Correspondence

STANDARDIZATION OF DIGITALIS

To the Editor:—Recent correspondence in THE JOURNAL (March 17, p. 862; April 14, p. 1246) regarding the standardization of digitalis leaves impressions that are likely to increase the dilemma of manufacturers.

Pharmacologists are largely responsible for introducing, and carrying on the principal investigations in, bio-assays, but the practice of bio-assay is chiefly the concern of manufacturers of pharmaceutic products. The latter require simple, reasonably accurate and economical methods that will give reproducible results. Such methods will increase the popularity and promote the use of bio-assays.

There is no doubt of the frog method being simple, but there is serious doubt of its giving accurate and dependable results. Moreover, frogs are practically unobtainable in arid and semitropical regions and importations are costly, so that an assay on frogs may actually be more expensive than on cats. However, cats too are difficult to obtain in sufficient quantities almost everywhere. Of course, it might be possible to import frog-assayed or cat-assayed digitalis from other parts, but this may not be desired for various reasons. I need not dwell on other difficulties and complications of the cat method, such as the difficult handling of cats, the indispensability of surgical anesthesia and operation, the complex technical arrangements for bio-assay, the considerable individual variability in animals, at least twelve cats being necessary and not six as stated in the correspondence, and the use of death as a single end point. These various phases of the problem of digitalis assay have long ceased to be academic and the search for other methods has continued.

With the object of improving the bio-assay of digitalis, and of eliminating the difficulties and complications of the frog and cat methods, Shoemaker and I suggested in 1926, and I definitely proposed in 1929, the use of the pigeon. The pigeon method has not been referred to in the correspondence mentioned, although it has been sufficiently described in well known scientific journals. This is not the place to discuss the details of and results with this method. The following list of references will provide these matters:

Hanzlik and Shoemaker: *Proc. Soc. Exper. Biol. & Med.* **23**: 298, 1926.
Hanzlik, P. J.: *J. Pharmacol & Exper. Therap.* **35**: 363 (April) 1929.
Hanzlik, P. J., and Stockton, A. B.: *J. Pharmacol. & Exper. Therap.* **35**: 393 (April) 1929.
Hanzlik, P. J.; Stockton, A. B., and Davis, S. S.: *J. Pharmacol. & Exper. Therap.* **41**: 5 (Jan.) 1931.
Hanzlik, P. J., and Wood, D. A.: *J. Pharmacol. & Exper. Therap.* **37**: 67 (Sept.) 1929.
Lehman, A. J., and Hanzlik, P. J.: *Proc. Soc. Exper. Biol. & Med.* **30**: 140 (Nov.) 1932.
Lehman, A. J., and Hanzlik, P. J.: *J. Pharmacol. & Exper. Therap.* **48**: 151 (June) 1933.
Dock, William; Stockton, A. B., and Lehman, A. J.: *Am. Heart J.* **8**: 707 (June) 1933.
Stockton, A. B.: *Am. Heart J.* **9**: 248 (Dec.) 1933.

Applications of the method, with confirmations and suggestions, have been published by:

Burn, J. H.: *J. Pharmacol. & Exper. Therap.* **39**: 221 (June) 1930.
Guidi, G.: *Rassegna di terap. e pat. clin.* **21**: 129 (March) 1930.
Starnotti, C.: *Rassegna di terap. e pat. clin.* **2**: 385 (July) 1930.
Munch, J. C.: Bio-Assays: A Handbook of Quantitative Pharmacology, Baltimore, Williams & Wilkins, 1931.
Carratalá, R. E.: *Semana méd.* **2**: 1606 (Nov. 26) 1931.
Averbuck, S. H.: *Arch. f. exper. Path. u. Pharmakol.* **157**: 342, 1930.
Redonnet: *Gac. méd. Espan.*, 1930.
Starnotti, C.: *Rev. rud.-Atm. de endocrinol.* **14**: 349 (June 15) 1931.
Chen, K. K., and Chen, A. L.: *J. Pharmacol. & Exper. Therap.* **49**: 503, 514, 561 (Dec.) 1933.
Chen, K. K.; Jensen, H., and Chen, A. L.: *J. Pharmacol. & Exper. Therap.* **47**: 307 (March) 1933.
Lieb, C. C., and Mulinos, M. G.: *J. Pharmacol. & Exper. Therap.* **48**: 282 (July) 1933.
Chen and Chen: *Arch. internat. de pharmacodyn. et de therap.* **47**: 297, 1934.

The advantages of the pigeon method may be briefly stated as simplicity, reasonable accuracy, and economy. Pigeons are easily obtained or raised everywhere; no surgical anesthesia or operation is necessary; a result is obtainable in fifteen minutes; the pigeons can be used repeatedly. A check on the results of bio-assay according to the emetic dose can be obtained, if desired, by determining the fatal dose in the same pigeon. Results with the pigeon method compare favorably with those by the cat method. It is possible to use the emetic dose for estimating the probable full therapeutic dose of digitalis (Stockton, 1933) and more satisfactorily than fatal doses according to the frog and cat methods (Dock, Stockton and Lehman, 1933). While this application should be further investigated, the results already obtained are promising enough to indicate that the denial of such possibilities for a bio-assay method in the correspondence mentioned is unwarranted.

In view of all that has been said, it would pay manufacturers to investigate the practical possibilities of the pigeon method for assaying digitalis.

P. J. HANZLIK, M.D., San Francisco.
Professor of Pharmacology, Stanford
University School of Medicine.

"DINITROPHENOL POISONING"

To the Editor:—I should like to make a correction in the article on "Dinitrophenol Poisoning" reported by Drs. Jackson and Duvall in THE JOURNAL, June 2.

Under the chemical analyses Dr. Jackson reported an icterus index of 20 on first examination. At the time the examination was made it was brought to Dr. Jackson's attention that the color obtained at that reading was almost entirely dissipated by the addition of 5 per cent hydrochloric acid. This is according to recommendation made by Dr. Tainter and his co-workers in THE JOURNAL of Nov. 4, 1933. A second determination could not be made at this time because of lack of serum. The second report of 5.3 was obtained on later serum (also dark in color), which was decolorized with 5 per cent hydrochloric acid.

I make this correction in order that the report may not be accepted by some as conclusive evidence that liver damage had occurred.

BERTHA L. ISAACS, Highland Park, Ill.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SENSITIVITY TO POLLENS AND GRASSES

To the Editor:—A man, aged 24, has had hay fever followed by bronchial asthma for the past several years. The hay fever has begun every year, excepting one, during the second or third week in August. One year he had a short and mild attack about the third week in July. The attack lasted only about a week but recurred in the latter part of August. He never has asthma until after the onset of hay fever, and the latter ceases after one or two hard frosts. He has recently been tested for sensitivity, the usual summer grasses and ragweed being used. He gave a distinctively positive test to each of these. What treatment would you suggest? Please omit name and town. M.D., Wisconsin.

ANSWER.—This patient is one of a large group who is undoubtedly hypersensitive to the pollen of both the various grasses and ragweeds. He is apparently much more sensitive to the ragweeds, as evidenced by more symptoms in August and September; but the fact that he has had trouble in July would indicate that he is affected also by the pollen of the ordinary grasses, such as timothy, orchard grass, red top and June grass. The finding of positive skin tests with the grasses and ragweeds confirm the double diagnosis of hay fever and asthma.

The patient should be treated as follows: For his hay fever due to the pollen of the grasses he should be treated coseasonally, as this season has already started. He should be given

intradermal injections every day or every other day beginning with 0.05 cc. of a 1:10,000 dilution of a mixed grass extract, followed by cautious increases up to about 0.50 cc. Treatment for grass pollen hay fever should cease about the first of August.

For the ragweed hay fever the usual preseasonal treatment is advisable if started at once. The first dose should be 0.05 cc. of 1:10,000 extract of mixed giant and short ragweed. If in the vicinity of Chicago it would be well to add about 20 per cent of an extract of burweed marsh elder to the two ragweeds. The second dose should be 0.10 cc., followed by increases of approximately 40 to 50 per cent up to a dosage of about 1 cc. Then 0.10 cc. of a 1:1,000 extract should be used and this increased similarly up to 1 cc. Following this, 0.10 cc. of a 1:100 extract may be used, with gradual increases up to about 0.50 cc.

These injections should be given in separate arms so that if any reactions occur the offending extract may be identified. If the reaction is manifested by a severe local inflammation, the last dose should be repeated and no increases should be given as long as local soreness is present. If, as occurs sometimes, a constitutional reaction follows, as manifested by urticaria, hay fever or bronchial asthma, epinephrine should be given at once in dosages of from 0.50 cc. to 1 cc. of a 1:1,000 dilution and may be repeated if necessary. Such a reaction calls for a decrease of the next dose of pollen extract.

The injections of ragweed extract had best be given three times a week so that a sufficient amount may be reached before the ragweed starts pollinating, about the middle of August. After this period the injections should be kept up, but the dose should be reduced to about one half of the highest amount reached. When the season is over the patient may be treated either perennially by giving injections every two weeks throughout the year or treatment may be stopped and begun again about the first of March of the next year with injections of grass and ragweed extracts.

MONILIASIS OF TONGUE

To the Editor:—One of my little patients has a case of moniliasis of the tongue, which shows itself as a thick, grayish white coating. Monilia organisms were found by smear and culture. Treatment with various fungicides (the last one a mixture of benzoic acid and thymol in water) has not given the slightest relief. This condition has persisted for more than a year. Please let me know what you consider the best treatment. An early reply, either by letter or in one of the next issues of THE JOURNAL, would be greatly appreciated. Kindly omit name.

M.D., California.

ANSWER.—The question was submitted to Dr. B. K. Ashford, who writes: "Let us consider that all fungicides of value have been unsuccessfully tried. From now on, attention should be devoted to Monilia vaccines made from a seven-day culture the virulence of which one has attempted to exalt by passage through laboratory animals. If one obtains a sore tongue on the third or fourth day after the injection of the third or fourth dose, one can be pretty sure that one is getting a local reaction which would be highly satisfactory. My method of making these cultures is that of Dr. Carl Michel, who worked here with me on preparing vaccines for use in sprue. After the usual method of sterilization, he gaged the strength of his vaccine not by counting the organisms in a given amount but by percentage of the sediment to the total fluid, using a 1 per cent preparation. We began with 0.1 cc., increasing the dose by one tenth more at each injection, these inoculations coming once a week. This should be used together with a strong alkaline mouth wash, and, if the child is old enough, a diet consisting of animal proteins, fresh vegetables and fruits, excluding sugars, fats and cereals."

BENEDICT TEST FOR SUGAR

To the Editor:—Does it matter if suspected urine and Benedict solution are boiled a long time? What other reaction could it be? I find that after prolonged boiling and letting the solution stand there is a yellow precipitate. Please name a new book on urinalysis.

EMIL LOPOREN, M.D., Rockford, Ill.

ANSWER.—The technic for performing the Benedict qualitative test for sugar in the urine is as follows: To 5 cc. of Benedict qualitative reagent add 0.5 cc. or 10 drops of urine and mix. Heat in a boiling water bath for five minutes or boil over a flame for two minutes, while shaking to prevent bumping. A green, yellow, orange or red finely granular precipitate that rapidly settles out indicates reduction. The color depends on the amount of sugar present. If only a small amount of reduction is present, allow the tube to stand or centrifugate it. The mixture changes to green or yellow when there is reduction. With complete reduction it becomes almost colorless. A flocculent precipitate that does not settle quickly is due to other substances than sugar.

Benedict's solution is less susceptible than Fehling's to reduction by other urinary constituents, as uric acid or creatinine. It is, however, promptly reduced by alkaptone acids or the conjugated glycuronic acids, as well as by an excess of preservatives such as chloroform, chloral and formaldehyde.

The first time a urine from any patient shows reduction, further tests are indicated to determine whether the substance is sugar, and the kind of sugar.

To be clinically significant, the urine must contain enough reducing substance to reduce Benedict's reagent in the heating time specified. If more than a trace of protein is present, it should be removed by acidifying with acetic acid, boiling and filtering.

An excellent new book on urinalysis is "Urine and Urinalysis" by Gershenfeld (Philadelphia, Lea & Febiger, 1933).

ONYCHOLYSIS

To the Editor:—I have a patient, a woman, about 30 years of age, who has onycholysis of every finger of each hand. There is no pain nor discomfort in any way and no other objective symptoms except a turning loose or separation of the nail from the nail bed. After the nail has become separated from the nail bed the nail assumes a lifeless and dead color and has no feeling of life in the separated part. The nails of the toes are perfectly normal. The patient came to Nevada from an Eastern state about three years ago and developed the condition about a year after residing here. She had never had the condition before coming to Nevada. The etiology of this condition is obscure, as the personal history and physical examination of the patient are negative for any other pathologic condition. I shall greatly appreciate any information that you may give me concerning the etiology and treatment of this condition. I am particularly concerned about the prognosis or treatment, if there is such a thing, as the patient's finger nails are in a bad condition and she is at all times terribly self conscious about her nails. As to treatment, I have tried numerous things, such as soaking the fingers in hot water and painting the nail bed with tincture of iodine, but the treatment has been most disappointing and absolutely devoid of benefit. If you are unable to enlighten me as to treatment, I shall greatly appreciate it if you will refer me to some authority who you think might give me the proper information. Kindly omit name and address.

M.D., Nevada.

ANSWER.—Onycholysis or separation of the nail plate from the nail bed is one of the characteristic nail changes of psoriasis. In this disease there is at the outset an accumulation of keratotic material beneath the free border, which crumbles away or is removed by the patient, leaving a space between the nail and its bed. Another characteristic change is pitting of the nails. It is possible that this case is due to psoriasis limited to the nails. It may also be due to other unknown causes.

The treatment that would offer the best chance of recovery is roentgen therapy, applied over the region of the matrix of the nail. The best result would probably be obtained by giving three fourths of an erythema dose at monthly intervals, using either filtered or unfiltered radiation. A maximum of six such treatments may be given.

TREATMENT OF LATE SYPHILIS

To the Editor:—I have been treating a case of apparent tertiary syphilis in a man, aged 47. I have given him three courses of treatment of neoarsphenamine from 0.45 Gm. up to 0.9 Gm., bismuth compounds and iodides. The treatment has extended over a period of about one and a half years. Frequent Wassermann tests have continued to show a 4+ and the last showed a 3+ reaction. I have just finished giving him his third course and his eighth treatment with neoarsphenamine. Would you kindly advise me as to the correct procedure in his treatment? I am much concerned because of my failure to make any impression with this treatment. Please let me hear from you. Kindly omit name.

M.D., Wisconsin.

ANSWER.—The crux of the situation here seems to be what is meant by apparent tertiary syphilis. Late syphilis may cause anatomic and functional damage in a number of different domains, particularly the central nervous system and the cardiovascular apparatus. It is impossible to suggest the proper therapeutic course without knowing the details as to the patient's physical condition. If there is no clinical evidence of neurosyphilis or of cardiovascular syphilis, and if the examination of the spinal fluid shows no abnormalities, it is reasonable to assume that the patient has either latent or late cutaneous or osseous syphilis. In the latter case, the further management of his treatment might well proceed as suggested in Queries and Minor Notes in THE JOURNAL, Nov. 4, 1933, page 1500, the query dealing with the treatment of Wassermann fast syphilis. If the patient has neurosyphilis or cardiovascular syphilis, the proper method of management is the treatment of either of these two conditions, and details cannot be furnished without more definite knowledge of the particular patient involved.

DIFFERENTIAL DIAGNOSIS OF DISTURBANCE OF NERVOUS SYSTEM

To the Editor:—A man, aged 42, a robust traveling salesman, noticed six months previous to consultation a wasting of the muscles, a tingling sensation and impairment of strength of his right hand, especially noticed when driving or writing. Examination discloses marked atrophy of fat, subcutaneous tissue, and the adductor pollicis and the first, second, third and fourth lumbricalis muscles of the right hand. The right arm is normal and has the same size and strength as the left arm; there has been no injury and he has always been right handed. Repeated physical and laboratory examinations have been negative. The reflexes are intact and normal. The Wassermann reaction of the blood and spinal fluid is negative. Blood counts, chemical examinations and culture give negative results. The basal metabolic rate is normal. The patient had a tonsillectomy seven years ago; previous to operation he had several attacks of acute tonsillitis. What is your diagnosis, prognosis and what treatment would you advise? Please omit name and address.

M.D., Florida.

ANSWER.—The possible diagnoses to be considered include degenerative changes in the anterior horn cells of the cord, either an amyotrophic lateral sclerosis or a progressive muscular atrophy, or pressure from a syringomyelia or a neoplasm. In the former there are typically no sensory symptoms, though some feelings of numbness may occur; these conditions usually are symmetrically distributed on the two sides of the body. With pressure in the neighborhood of the anterior horns there is usually some pain and hyperesthesia, which are often severe but may be absent; in the latter case there will usually be loss of pain sensibility, often without loss of tactile sensibility, of segmental distribution. The degenerative lesions are usually progressive and spread to involve other levels of the cord, often progressing to the medulla and causing a bulbar paralysis. No remedies seem to have much effect in arresting the disease, though the administration of increasing doses of strychnine has been advocated. In the pressure conditions it is possible that surgical intervention may have good results. The important indication in this case, therefore, is the establishment of a definite diagnosis. A complete neurologic examination is urgently advised.

COLLECTION OF URETERAL URINE

To the Editor:—The general practitioner is in need of a simple, inexpensive instrument capable of collecting separate ureteral specimens. I have in mind a rubber catheter consisting of three flexible tubes, two molded so as to fall opposite each ureteral orifice after insertion, and one molded so that its tip will rest on the floor of the bladder, the whole unit to be manufactured in the usual catheter sizes. First, is there such an instrument on the market? Second, what is the distance between the interior urethral orifice and the ureteral orifice in the average urinary bladder? In the adult? In a child of about 5 years? Third, do the ureteral orifices and internal urethral orifice form approximately an equilateral triangle? In an adult? In a child?

ROBERT MONFORT, M.D., Wolverine, Mich.

ANSWER.—There are a number of such instruments on the market, one is the Harris segregator and another is known as the Luys. Neither of them is used to any extent at the present time because of their obvious inaccuracy. From the description given, an instrument of this kind would not seem to be of much practical value. The distance from the internal urethral orifice to the ureteral orifices is about 2.5 cm. in the adult. The internal urethral orifice and the ureteral orifices form approximately an equilateral triangle.

BLOODY SEMEN

To the Editor:—Will you kindly let me know the possible causes and course of treatment for bloody semen? Please omit name.

M.D., New Jersey.

ANSWER.—Hemospermia, or the presence of blood in the semen, is most frequently due to a chronic seminal vesiculitis. It should be noted, however, that it is necessary to differentiate between true and false hemospermia. In true hemospermia the blood and the semen are well mixed, since the bleeding occurred in the seminal vesicles, whereas in false hemospermia the origin of the blood is in the urethra, in which case the semen is streaked with blood.

Although this origin of the blood is generally accepted, there are some who believe that the blood may originate in the prostate gland and not in the seminal vesicle, and others believe that the origin of the blood is a chronic prostatitis associated with urethritis. However, it is the opinion of most urologists that the blood in hemospermia originates in the seminal vesicle. In rare instances hemospermia may be due to sexual excess, although this is very exceptional. Stones in the prostate and carcinoma of the prostate rarely produce hemospermia.

In the management of this condition, due consideration must be directed toward the diet, which should be bland. The use of alcohol is contraindicated. One should see that the bowels move daily and naturally. Sexual excess is to be avoided. The use of heat by rectum has a definite place in treatment. This may be used either in the form of hot rectal irrigations or by means of a prostatic tube. Next in importance to the use of heat by rectum is massage of the vesicles. Massage should be gentle so as not to produce pain or bleeding. Massage should be carried out about once in five days, best with a full bladder. After the stripping, the patient is instructed to empty the bladder. This may be followed by an irrigation of the urethra and bladder with a warm solution of potassium permanganate in the strength of 1:5,000. Or, instead of irrigations, one may use instillations into the deep urethra of a 1 per cent solution of strong silver protein or a 5 per cent solution of mild silver protein. Internally the use of potassium iodide has been recommended.

In order to facilitate drainage, dilation of the deep urethra with sounds or dilators is indicated, and here again manipulations should be gentle. All traumatism must be carefully avoided during instrumentation.

BACTERIOLOGY OF NORMAL ORGANS

To the Editor:—Last fall while I was attending a surgical clinic at Cook County Hospital, I heard the surgeon, a professor in one of the large medical schools of Chicago, state that in cholecystectomy he rarely peritonealized the gallbladder bed unless it was very easily done and did not require a suture being passed through the liver substance, for normally and in health the liver is teeming with bacteria. Some time later I had occasion to ask our pathologist his opinion as to the correctness of this statement about the organisms in the liver tissue. His reply was that not only is that true of the liver but of the skin layers, body musculature, peritoneum and organs generally. Can you agree to this and is there any literature on this unusual disclosure?

WILLIS P. BAKER, M.D., Santa Ana, Calif.

ANSWER.—To say that the liver and other internal organs in conditions of health are "teeming with bacteria" is gross exaggeration. Apparently occasional bacteria may occur in the liver and other internal organs in health. This question was studied carefully by W. W. Ford (On the Bacteriology of Normal Organs, *J. Hyg.* **1**:277, 1901) and he found that in at least 70 per cent of the animals that he studied the organs contained bacteria that were capable of development provided a sufficient time was allowed to elapse between their removal and their final examination. In no case did Ford or any one else find that normal organs were "teeming with bacteria."

ENLARGED THYMUS, RADIATION AND THYMIC DEATH

To the Editor:—This question must be decided by our medical board, which desires to seek the most authoritative information on this important subject: 1. Do you as a routine roentgenograph all children's chests for an enlarged thymus before operation? 2. If this is your practice, have the results justified the procedure? 3. If not your practice to roentgenograph all chests, do you roentgenograph any and under what circumstances? 4. If not your practice now, did you at any time do this and what was the reason for abandoning this procedure? 5. Have you had any so-called "thymic deaths" after diagnosing and treating the case by radiation?

ALBERT L. VOLTZ, M.D., Richmond Hill, N. Y.

ANSWER.—In addition to answering the questions specified in the query, it seems propitious that a word be said about the present attitude toward congenital enlargement of the thymus. One has only to review the literature to realize that there has been a decided change during the last ten years. Enlargement of the thymus either alone or in conjunction with a generalized adenopathy was considered a usual cause of sudden death in infants and young children. During the last two years this attitude has been changed to the extent that many feel that enlargement of the thymus should never be credited as causing these sudden deaths. Of the more recent contributions tending to explain sudden death associated with enlargement of the thymus, Waldbott (*Am. J. Dis. Child.* **47**:41 [Jan.] 1934) reports the pathologic process in thirty-four cases and discusses the observations and their explanation from an anaphylactic standpoint. He feels that allergic studies should be made in all cases in which there is roentgen evidence of an enlarged thymus.

At present it is not customary to roentgenograph all children's chests for enlargement of the thymus before operation. Infants under 1 year of age are usually examined with the fluoroscope or roentgenographed if time permits, and always in the event of any symptoms.

It is probably advantageous to examine all infants' chests with the fluoroscope whether or not operation is contemplated. With proper precautions and in competent hands, the exposure to x-rays necessary to produce shrinking of an enlarged thymus is accompanied by a minimum of risk.

HYPOTENSION AND BLOOD PRESSURE NEUROSIS

To the Editor:—I would appreciate an opinion on the following case: A man, aged 60, an executive (plant manager), 6 feet 1 inch (185 cm.) in height, weighing 193 pounds (87.5 Kg.), who is active and to all appearances and tests is in an excellent state of health, three years ago at a routine physical examination in New York was found to have a blood pressure of 120 systolic, 80 diastolic. The physician thought it too low and advised tri-weekly injections of ampoules of pitressin. This advice was followed out for three months, during which time the blood pressure varied from 116/78 to 126/84, being 122/80 when the medication was stopped. With this psychologic background he now has his blood pressure taken monthly and following each test complains of lack of pep, an occasional trifling dizzy spell and thinks that something should be done to increase his blood pressure. Please omit name.

M.D., Canada.

ANSWER.—From the data given it is quite clear that the patient has developed a phobia concerning his presumed hypotension. The unwise remarks of the physician in New York unquestionably initiated this lamentable neurotic sequence, particularly as the stimulus was repeated thrice weekly for several months while he was receiving the totally unnecessary and obviously useless injections. This arterial tension, averaging about 121/80, is within the normal limits, and he should feel notably relieved and grateful that it is not higher. There is no reason whatever for ascribing his complaints, particularly the "lack of pep," to the status of the circulation. Other possible courses of his apokamnosis and slight vertigo must, of course, be ruled out. One of the most common conditions found with complaints such as these is a moderate habitual anemia. It would be interesting to note his subjective complaints if he was misinformed that his tension were higher. An active man of 60 cannot and must not expect to retain his youthful energy and endurance indefinitely. Studies of longevity by several large life insurance companies definitely indicate that those with low normal arterial tension have a greater than average life expectancy. It may be that his apprehension is due, in part, to a misunderstanding with regard to the significance of the arterial tension; he may possibly feel that his present condition is due to inadequate cardiac strength. Such an explanation is obviously wrong, for the pulse pressure is quite adequate and nothing was stated about tachycardia or undue distress on exertion. Every possible effort must be made to convince him of the entire normality of his circulation and of the unwiseness of his anxiety.

ETHER AND SURGICAL SOLUTION OF CHLORINATED SODA IN EMPYEMA

To the Editor:—I would greatly appreciate any information you can give me with regard to the efficacy of ether irrigations in empyema when surgical solution of chlorinated soda lessens the purulent discharge but does not entirely eradicate it. Please omit name.

M.D., Chicago.

ANSWER.—No especial merit in the use of ether in chronic empyema is known. Surgical solution of chlorinated soda is both an antiseptic and a proteolytic agent. Many empyemas of short duration will stop draining if sterile, without obliteration of the cavity. If some secretion continues it is usually harmless if sterile but, if infected, reoperation is necessary. When the pleura is markedly thickened, sterilization is difficult and surgical collapse with obliteration of the cavity is usually necessary. The important thing is to keep the drainage wound open until either the cavity is sterile or the lung has expanded so that the wound can heal from the bottom out. The tubes must not be too long for the cavity. The size of the cavity may be determined from time to time by taking a roentgenogram after filling with a liquid opaque substance that will not block drainage. Most of the drained empyema cavities will heal without any irrigation whatever. General nutrition and breathing exercises are valuable.

PREOPERATIVE AND POSTOPERATIVE MANAGEMENT OF GOITER WITH AURICULAR FIBRILLATION

To the Editor:—I should appreciate a statement as to the preoperative medical management of a woman, aged 63, with adenomatous goiter of several months' duration. She has a moderately enlarged heart and auricular fibrillation. The apex rate is 145 and the pulse rate 100. There is moderate hypertension. The liver is moderately enlarged as a result of cardiac decompensation. There is a moderately elevated basal metabolic rate of plus 30 to plus 40. Please omit name and address.

M.D. Massachusetts.

ANSWER.—Compound solution of iodine, 2.8 cc. a day, should be given continuously until a month after operation. Subtotal thyroidectomy should be in one stage after the greatest cardiac improvement has been obtained by all the usual therapeutic measures. This may not be for five or six weeks. The primary period of lowest metabolic depression under the iodine, occurring at about two weeks, should be passed by in favor of the later time, when the heart and circulation will be in the best possible condition. Digitalis, absolute bed rest, opiates and diuresis should be used to restore compensation. Conversion of the heart to a regular rhythm is not necessary before operation. It may occur spontaneously postoperatively or be hastened by giving quinidine.

COLDNESS OF SKIN IN LOCALIZED AREAS

To the Editor:—Kindly advise me as to the probable cause of coldness of the skin over the anterior surfaces of the thighs and posterior surfaces of the calves of both legs. The sensation of cold necessitates the wearing of woolen hose and underwear, but this does not relieve the sensation of chilliness even in a heated room. The patient is a man, aged 52, robust, active and in the best of health, as proved by several complete physical examinations. He has not been confined to the house from illness for the past thirty years and has no other complaints, aside from these localized areas of coldness. Is this a circulatory condition or neurotic and what measures should be instituted to relieve the condition aside from massage, infra-red therapy and exercise? Please omit name.

M.D., Ohio.

ANSWER.—The possibilities are various, but in the absence of signs of spinal cord or neuritic changes the symptoms described are most likely circulatory in origin. Treatment should be directed at the improvement of the general circulation, perhaps with the use of small doses of digitalis. An attempt may also be made to relax and dilate the vessels with phenobarbital or small doses of the nitrites, preferably bismuth subnitrate, 0.65 Gm., three times a day.

NERVE INJECTION FOR NEURITIS

To the Editor:—Please give me details of technic of the hypodermic injection for a localized neuritis, over the fifth or sixth lumbar region. Give strength of alcohol and amount and if more than one injection. Please omit name.

M.D., Missouri.

ANSWER.—A neuritis localized over the lower lumbar dermatomes is best and most safely treated by the injection of physiologic solution of sodium chloride or of 0.5 per cent solution of procaine hydrochloride in physiologic solution of sodium chloride into the sacral canal. A spinal puncture needle is introduced obliquely between the two sacral cornua so as to pierce the sacrococcygeal ligament and is then directed sharply upward for several centimeters into the epidural space of the sacral canal. From 50 to 80 cc. of fluid is injected. Under no circumstances is alcohol to be used in this locality.

ANALGESIC FOR GALLSTONE COLIC

To the Editor:—Will you please tell me whether or not there is any drug the action of which may be depended on to relax spasm in a patient who has recurrent gallbladder attacks? These attacks, while infrequent, are very severe and often necessitate from one-half to three-fourths grain (0.03 to 0.05 Gm.) of morphine. Atropine cannot be used because of idiosyncrasy. Morphine, pantopon and codeine cause violet nausea, which lasts from twenty-four to forty-eight hours. The barbital derivatives, allonal and sodium amytal, have been tried with little or no success. Any information or help you can give me along this line will be appreciated. Please omit name.

M.D. Pennsylvania.

ANSWER.—Sometimes a combination of analgesics acts more powerfully and with fewer side effects than any one of them alone. For instance, gallbladder colic as well as renal colic can often be relieved by

Extract of hyoscyamus	0.15 Gm.
Phenobabital	0.50 Gm.
Codeine phosphate	0.50 Gm.
Amidopyrine	5.00 Gm.

Mixed and divided into fifteen capsules, one being taken with hot water every two hours, as required, for pain.

IMMUNITY IN UNDULANT FEVER

To the Editor:—Is a person who has undulant fever immune to another attack? Is there any method of immunizing one against this disease? Perhaps you can also advise me concerning a veterinarian who feels that he would give up his profession if he should be liable to another attack.

H. R. MIXER, M.D., Falls City, Neb.

ANSWER.—It is generally considered that one attack of undulant fever confers lasting immunity. The few reported instances of possible reinfection should probably be interpreted as recurrences. Immunity following vaccination has been reported by a few investigators, notably Nicolle and Conseil. Many veterinarians apparently acquire immunity without the development of clinical symptoms of the disease.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALABAMA: Montgomery, July 10-13. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

AMERICAN BOARD OF OPHTHALMOLOGY: Chicago, Sept. 8. *Application must be filed sixty days prior to date of examination.* Sec., Dr. William H. Wilder, 122 S. Michigan Blvd., Chicago.

ARIZONA: Phoenix, July 3. Sec., Dr. J. H. Patterson, 320 Security Bldg., Phoenix.

CALIFORNIA: San Francisco, July 9-12, and Los Angeles, July 23-26. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

COLORADO: Denver, July 3-6. Sec., Dr. Wm. Whitridge Williams, 422 State Office Bldg., Denver.

CONNECTICUT: *Regular.* Hartford, July 10-11. *Endorsement.* Hartford, July 24. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden. *Homeopathic.* New Haven, July 10. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: Washington, July 9-10. Sec., Commission on Licensure, Dr. W. C. Fowler, 203 District Bldg., Washington.

MAINE: Augusta, July 5-6. Sec., Board of Regis. of Medicine, Dr. Adam P. Leighton Jr., 192 State St., Portland.

MASSACHUSETTS: Boston, July 10-12. Sec., Board of Regis. in Medicine, Dr. Stephen Rushmore, 144 State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: The examinations in Parts I and II will be held at centers in the United States where there are five or more candidates, Sept. 12-14. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEVADA: *Reciprocity.* Carson City, Aug. 6. Sec., Dr. Edward E. Hamer, Carson City.

NORTH DAKOTA: Grand Forks, July 3-6. Sec., Dr. G. M. Williamson, 4½ S. 3d St., Grand Forks.

OREGON: Portland, July 3-6. Sec., Dr. Joseph F. Wood, 509 Selling Building, Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 10-14. Sec., Board of Medical Education and Licensure, Mr. W. M. Denison, 400 Education Bldg., Harrisburg.

RHODE ISLAND: Providence, July 5-6. Dir., Public Health Commission, Dr. Lester A. Round, 319 State Office Bldg., Providence.

SOUTH DAKOTA: Rapid City, July 17-18. Dir., Division of Medical Licensure, Dr. Park B. Jenkins, Pierre.

WASHINGTON: *Basic Science.* Seattle, July 16-17. *Medical.* Seattle, July 19-21. Dir., Department of Licenses, Mr. Harry C. Huse, Olympia.

WEST VIRGINIA: Wheeling, July 9. State Health Commissioner, Dr. Arthur E. McClue, Charleston.

ADDITIONAL HOSPITALS APPROVED

The Council on Medical Education and Hospitals of the American Medical Association has given its approval to the following hospitals since the publication of the last previous list in THE JOURNAL, March 3:

Hospitals Approved for Intern Training

St. Helena Sanitarium and Hospital, Sanitarium, Calif.
Wilmington General Hospital, Wilmington, Del.
Kentucky Baptist Hospital, Louisville, Ky.
Bon Secours Hospital, Baltimore.
St. Vincent Hospital, Worcester, Mass.
All Souls Hospital, Morristown, N. J.
Manhattan General Hospital, New York.
St. Thomas Hospital, Nashville, Tenn.
Pierce County Hospital, Tacoma, Wash.

Hospitals Approved for Residencies in Specialties

Mendocino State Hospital, Talmage, Calif. Psychiatry.
St. Francis Hospital and Sanatorium, Colorado Springs. Mixed.
Garfield Memorial Hospital, Washington, D. C. Surgery and radiology.
James M. Jackson Memorial Hospital, Miami, Fla. Medicine and surgery.
Provident Hospital, Chicago. Medicine, obstetrics, pediatrics and surgery.
Methodist Episcopal Hospital, Indianapolis. Pathology.
Bon Secours Hospital, Baltimore. Surgery.
Provident Hospital, Baltimore. Surgery, medicine and obstetrics.
Medfield State Hospital, Medfield, Mass. Psychiatry.
State Hospital No. 1, Fulton, Mo. Psychiatry.
St. Luke's Hospital, St. Louis. Medicine, obstetrics-gynecology and surgery.
Arnot-Ogden Memorial Hospital, Elmira, N. Y. Mixed.
Jamaica Hospital, Jamaica, N. Y. Mixed.
New York Foundling Hospital, New York. Pediatrics-obstetrics.
Craig Colony, Sonyea, N. Y. Epilepsy.
James Walker Memorial Hospital, Wilmington, N. C. Mixed.
Deaconess Hospital, Cincinnati. Medicine and surgery.
Sunny Acres, Cleveland Tuberculosis Sanatorium, Warrensville, Ohio. Tuberculosis.
George F. Geisinger Memorial Hospital, Danville, Pa. Medicine and surgery.
Jewish Hospital, Philadelphia. Medicine and surgery.
Reading Hospital, Reading, Pa. Medicine, pathology and surgery.
John Sealy Hospital, Galveston, Texas. Surgery and obstetrics-gynecology.

Hospitals Approved for Additional Residencies

Los Angeles County Hospital, Los Angeles. Orthopedics, malignant diseases, neurology-neurosurgery and communicable diseases.
Colorado General Hospital, Denver. Ophthalmology (fellowship).
Presbyterian Hospital, Chicago. Neurosurgery-neurology, obstetrics-gynecology and pathology (fellowship).
University Hospitals, Iowa City. Urology.
St. Joseph's Hospital, Baltimore. Medicine-pediatrics.
Boston City Hospital, Boston. Neurology and neurosurgery.
Massachusetts General Hospital, Boston. Anesthesia.
Jewish Hospital, St. Louis. Ophthalmology-otolaryngology.
St. Mary's Group of Hospitals, St. Louis. Pediatrics.
Lenox Hill Hospital, New York. Obstetrics, tuberculosis, otolaryngology and radiology.
Metropolitan Hospital, New York. Ophthalmology, otolaryngology, neurology, orthopedics and pathology.
Montefiore Hospital for Chronic Diseases, New York. Dermatology-syphilology.
St. Luke's Hospital, New York. Pediatrics and radiology.
Cincinnati General Hospital, Cincinnati. Dermatology and psychiatry.
University of Oregon Medical School Hospitals, Portland. Pathology and radiology.
Presbyterian Hospital, Philadelphia. Urology.

Maine March Report

Dr. Adam P. Leighton Jr., secretary, Board of Registration of Medicine, reports the written examination held in Augusta, March 13-14, 1934. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Six candidates were examined, all of whom passed. Three physicians were licensed by reciprocity and one physician was licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
Loyola University School of Medicine		(1933)	86.2*
Harvard University Medical School		(1932)	84.7
Tufts College Medical School	(1932) 86.7,	(1933)	82.4
Marquette University School of Medicine		(1933)	86.6
University of Montreal Faculty of Medicine		(1932)	80

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery		(1911)	Illinois
Rush Medical College		(1911)	Illinois
Medical College of Virginia		(1930)	Virginia

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Harvard University Medical School		(1931)	N. B. M. Ex.

* This applicant has completed his medical course and will receive his M.D. degree on completion of internship.

Connecticut March Examination

Dr. Thomas P. Murdock, secretary, Medical Examining Board, reports the written examination held in Hartford, March 13-14, 1934. The examination covered 7 subjects and included 70 questions. An average of 75 per cent was required to pass. Twenty-three candidates were examined, 17 of whom passed and 6 failed. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
Yale University School of Medicine		(1930)	75.9
Georgetown University School of Medicine		(1933)	78.3,* 78.9
University of Maryland School of Medicine and College of Physicians and Surgeons		(1933)	81.6
Harvard University Medical School		(1933)	76.7
Tufts College Medical School	(1933)	75.3,	78.4, 80.6
Columbia University College of Physicians and Surgeons		(1933)	88.5
Long Island College of Medicine		(1933)	81.5
New York University, University and Bellevue Hospital Medical College	(1926)	75,	(1932) 84.4*
Jefferson Medical College of Philadelphia		(1933)	76.6*
University of Tennessee College of Medicine		(1927)	77.1
University of Vermont College of Medicine	(1932)	78.8,	(1933) 75.6
Ludwig-Maximilians-Universitat Medizinische Fakultat, Munchen, Bavaria, Germany		(1923)	75.1*

School	FAILED	Year Grad.	Per Cent
Georgetown University School of Medicine	(1932) 66.7,	(1933)	70.3, 71.6
Queen's University Faculty of Medicine		(1924)	73.2
Osteopaths, 2†			

Thirteen physicians were licensed by endorsement from January 10 to May 21. The following schools were represented:

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
University of California Medical School		(1931)	California
Yale University School of Medicine	(1925), (1928)		New York, (1932) N. B. M. Ex.
University of Maryland School of Medicine and College of Physicians and Surgeons		(1923)	Maryland
Harvard University Medical School		(1919)	New York, (1929) N. B. M. Ex.
Columbia University College of Physicians and Surgeons	(1910), (1927), (1931)	N. B. M. Ex., (1920), (1921)	New York
McGill University Faculty of Medicine		(1931)	N. B. M. Ex.

* License has not been issued.
† One osteopath was examined in medicine and surgery and the other in surgery only.

Book Notices

The Relief of Pain in Childbirth. By F. Neon Reynolds, M.C.O.G., F.R.C.S., Hon. Obst. Surgeon to the Hospital for Women and Children, Harrow Road. Cloth. Price, 10/6. Pp. 114. London: Medical Publication, Ltd., 1934.

In this monograph the author first takes up preliminary details that he considers of great importance for the relief of pain during labor; namely, the treatment of the more common mental and physical discomforts. He points out the different requirements in the first and second stages of labor and considers in detail a few methods of producing relief in each of these stages of labor. For use in the first stage the author takes up (1) morphine and scopolamine, (2) tribrom-ethanol (avertin) (3) the barbiturates (nembutal, pernocton and sodium amytal), (4) paraldehyde and (5) nitrous oxide and oxygen. For relief in the second stage, he analyzes the advantages and disadvantages of (1) nitrous oxide and oxygen, (2) chloroform, (3) ether and (4) evipan. The author concludes that complete morphine-scopolamine narcosis involving repeated doses of scopolamine is a complicated procedure entirely unnecessary for the average labor. However, a single dose of morphine and scopolamine, given when labor is well established, is undoubtedly the safest and most efficient analgesic for the early hours of a primigravida's labor. Tribrom-ethanol has minor difficulties of administration and produces inconstant results; hence the author does not advise this method. He dismisses the barbiturates for routine use because they are dangerous drugs. However, he considers paraldehyde an almost ideal drug. It is perfectly safe for primiparas and multiparas at whatever stage of labor it is given. There is a wide margin of safe dosage, its preparation is easy, and it requires simple apparatus for its administration which can be carried out by any one skilled in giving an enema. It does not prolong labor and has no ill effects on mother or baby. For the second stage of labor the author believes that nitrous oxide and oxygen is ideal as regards safety and efficiency, but to produce these effects it is necessary to have a skilled anesthetist with expensive and cumbersome apparatus. He therefore considers chloroform the only alternative for use during actual delivery and the preceding hour or so. This drug is well tolerated by the pregnant woman, is an extremely efficient analgesic and anesthetic, is not bulky, is cheap and is easily administered. The disadvantages consist almost entirely of factors that are under the control of the administrator. In spite of what the author claims for chloroform, it is seldom used in the United States and properly so. Even with skilled administration there is danger of fatal, delayed chloroform poisoning after its prolonged use or in susceptible individuals. The book is timely because of the numerous attempts at present to find new analgesics and anesthetics, not all of which are safe.

Notes on the Medical Treatment of Disease for Students and Young Practitioners of Medicine. By Robert Dawson Rudolf, C.B.E., M.D., F.R.C.P., Professor of Therapeutics in the University of Toronto. Fourth edition. Cloth. Price, $4. Pp. 540. Toronto: University of Toronto Press, 1934.

The aim of this little book, which now appears in its fourth edition since 1921, is to impress on the student and young practitioner the broad principles of the medical treatment of the sick. It is therefore not to be expected that it would cover exhaustively even the frequently encountered diseases with which it deals or that it would delve deeply into the details of special treatment. The latter are, indeed, as stated in the preface, "largely omitted or only hinted at." Nevertheless, one cannot but wish at times that a few more of them had been given rather than so many statements of a general nature which can be of little direct help to a reader seeking to learn just what to do in a given case. The following is typical (p. 276): "Lately copper has been used as an adjuvant to iron. Small doses of the sulphate are employed." One may conceivably wish to know just what constitutes a small dose of copper sulphate in the circumstances. Queer allocations of space are also not infrequent in the book, as witness: (*a*) Nothing more definite is presented on the newer preparations of liver and stomach in the treatment of pernicious anemia than the following (p. 281): "Extracts of liver for intramuscular or intravenous use have now been prepared by many workers and promise well. Farquharson [reference] has lately published an encouraging report of their use intramuscularly. An extract of the stomach has the same beneficial action and is now often used instead of liver." But more than two pages is devoted to the use of arsenic in this disease, including a recommended dosage for atoxyl! (*b*) The treatment of varicose veins is quickly dismissed as being a surgical matter, but the discussion of peritonitis and appendicitis covers together about eleven pages. (*c*) There are two full pages of iodide therapy in syphilis, only ten lines devoted to bismuth compounds—though to be sure this is three lines more than is given to the raw meat diet, including horse flesh, in the therapy of pulmonary tuberculosis. (*d*) A ten and one-half page special treatise on the therapeutic use of oxygen is to be found but not one single mention of the oxygen tent, though the writer does state that he saw the oxygen chamber in use at Cambridge in 1919 (p. 301), "where Dr. Barcroft and his assistants were experimenting with it." (*e*) In connection with Addison's disease there is a more or less correct but nevertheless entirely unnecessary discussion of the general pharmacologic effects of epinephrine. (*f*) The often effective, though to be sure somewhat difficult, ketogenic diet in epilepsy is discussed as follows (p. 513): "Fits are often stopped by starvation and as this produces acidosis and ketosis it has been suggested that a high fat diet might be of value, and several physicians report good results with this regime [reference]." (*g*) As specific remedies in amebic dysentery the author discusses only ipecac and its derivative emetine, save for a four-line reference to a brand of chiniofon, of which he says (p. 396) "lately good reports are appearing." The authorities cited with regard to ipecac wrote in 1922-1923.

On the whole it is probable that the grievous faults of this book are solely ascribable to the plan which has been rigidly followed of discussing in fixed order matters of diagnosis, environment, diet, specific treatment and symptomatic treatment in connection with each of a selected list of diseases. Such a formula must force the inclusion of much that is mere space filling just as inevitably as it results in the conspicuous absence of many things of great importance.

Die diätetische Behandlung der Allergie bei inneren Erkrankungen. Von Dr. Carl Funck, Chefarzt der Abteilung für Allergie und Ernährungskrankheiten am Elisabeth-Krankenhaus Köln-Hohenlind. Paper. Price, 2.40 marks. Pp. 92. Leipzig: Johann Ambrosius Barth, 1934.

This work is propaganda on allergic diets. One fourth concerns the most obvious allergic potentialities of foods. The author is indignant at fats, beverages and cheese and relatively shrugs his shoulder at fish and nuts. One eighth of his effort is lavished on the dietetic management of such conditions as acute and chronic gastritis, hypo-acidity, hyperacidity, enteritis, dyspepsia and colitis in allergic individuals. A legitimate eighth spends itself on various diets and so-called cures. One sixth is set aside to consider specific dietetics of specific allergic diseases, and most of the pages are squandered on such sterling allergic worthies as gout, arthritis, epilepsy, essential hypertension and acquired hypersensitiveness in the nature of arsphenamine reactions. In the remaining third of the monograph the author propounds his conception that food allergy resembles the sensitization produced by bacterial reinfection, that a good food is one susceptible of being assimilated into the body economy without becoming a foreign protein, and that the basis of all allergic diets should be a dietary poor in animal protein.

Even the enthusiastic American allergist will protest. Where is the proof of these pronouncements? There is no mention of skin tests. Although skin tests have honest limitations that are recognized by the seasoned unbiased scientist, much of the concrete evidence incriminating foods as etiologic factors was originally based on skin tests.

The unfortunate German genius for antagonizing runs comically rampant through this work. In the old days these writers simply ignored American priorities, if, indeed, any reference was made. In Funck's book, too, Rowe's elimination diets

are mentioned only to be belittled for any German use. Rowe's name and the names of other non-German authors are omitted from the bibliography, while Urbach, quoted in the same passage, finds a place. In the portion of the book concerned with foods in general, the most ludicrous attacks are made. Only blind egotism would cast suspicion on French red wines while absolving those of German origin. The author says "When butter is at least compatible, why not German butter instead of foreign oil?" Only such an author could denounce Camembert cheese with an exclamation point. Scientific writing should not be prostituted to political propaganda.

Children, Inc.: The Post-War "Administration" of the Whole Child Life of One Baltic State in Its Critical Period. A Factual Narrative. By Thomas J. Orbison, Chief of Latvian Section, American Relief Administration Child Fund. Cloth. Price, $2. Pp. 294, with 6 illustrations. Boston: Stratford Company, 1933.

During the period of postwar rehabilitation of the European civilian population, the author, a captain in the medical corps, was made chief of the Latvian section of the American Relief Administration Child Fund. He unfolds the tale of that portion of the gigantic relief project with which he was connected, in a simple style that is easy to read. The enlistment of the Women's Committee to his aid and the handling of the local political factions speak for the diplomatic acumen of the author. The chapter on the siege of Riga by the German-Russian White Army is an excellent portrayal by an eye witness of a dramatic incident. The author gives an interesting account of his experiences in postwar child welfare.

Studies on Gonadotropic Hormones from the Hypophysis and Chorionic Tissue with Special Reference to Their Differences. By Christian Hamburger. Acta pathologica et microbiologica Scandinavica. Supplementum XVII. Paper. Pp. 184, with 33 illustrations. Copenhagen: Levin & Munksgaard, 1933.

This excellent monograph is a record of the author's experimental studies carried out during 1930-1933 in the University Institute for General Pathology, Copenhagen, on materials from exclusively human sources; it was translated from the Danish by Dr. Hans Andersen. The experimental work has been comprehensive, the facts rigorously separated from theory, and the deductive part developed in an apparently reasonable manner; the world literature on the subject is treated satisfactorily but not exhaustively.

Dr. Hamburger's principal thesis is that whereas urines of normal men and women do not contain gonad-stimulating substances demonstrable by simple injection of the urine into immature female rats and mice, the urines of castrated men and women do contain such substances in relatively large amounts (confirming the observations of Fluhmann in 1929). The gonad-stimulating substances of castrate urines, however, are different from those contained in the urines of pregnancy.

Routine methods of injecting untreated urines, or the alcohol precipitate of the active substance, are given and the author describes with meticulous care the animal responses to these substances (ovarian uterine, vaginal smears); from thirty to fifty animals are often used in the assay of urine from one individual. That urines may be compared adequately, they are reduced to the same specific gravity (a dilution factor being avoided) and the alcohol precipitation method is preferred, though doubt is thrown on a quantitative extraction of the active substance. Animals were killed 100 hours after the first of five injections during two days.

A careful comparison of the effects of castrate urines with the urines of pregnancy revealed noteworthy qualitative differences in the effects of gonad-stimulating substances contained in each. Castrate urines characteristically caused only follicle stimulating effects and did not produce "blood points" or corpora lutea (except in very rare instances). All follicles were stimulated but all were of the same size. The uterus was hypertrophied but not fluid distended. Pregnancy urines, on the other hand, stimulated only a selected few follicles and these to a large size; corpora lutea and blood follicles were present and the uterus was usually distended by fluid. The size of ovaries, following castrate urine treatment, were roughly proportionate to the dosage, which does not hold for pregnancy urine effects. Zondek's mouse-rat unit of sensitivity to pregnancy urines was confirmed, as 1 mouse unit equals 5 rat units; but in castrate urine injections the mouse is more sensitive than the rat, the ratio being 1 mouse unit to from one-third to one-half rat unit.

These and many other lines of evidence lead to the conclusion that the substances in castrate urines differ from those of pregnancy urines, and since implantation of fresh human hypophyses gave responses similar to those from castrate urines and different from those of pregnancy urines, the author marshals a strong line of evidence and argument that the gonad-stimulating substances in castrate urines are hypophyseal in origin whereas those in pregnancy urines are decidual in origin.

The author subscribes to the notion of the separateness of the follicle stimulating and luteinizing substance of pregnancy urines and hypophyseal extracts but states his own inability, and that of others, to separate them successfully by extraction methods. It is pointed out that the castrate organism can so separate them since castrate urines do not contain appreciable quantities of the luteinizing principle.

The author's experiments demonstrate a synergistic effect between hypophyseal secretions and the gonadotropic principle from the urine of pregnancy of the nature described by Evans, Meyer and Simpson and explained by them as a catalytic effect of the urine factor on the growth hormone. Hamburger, though in agreement on facts, offers a contrary interpretation in which the action is merely one of follicle sensitization by hypophyseal derivatives which is essential before the effect of the urine extract is possible. Hypophyseal derivatives stimulate many follicles; hence the action of the urinary factor results in more corpora lutea (than with the latter alone) with the consequent greater size of the ovaries. He finds the same synergistic effect if hypophyseal substances and the gonadotropic principle from the urine of pregnancy are injected on two separate days, thus ruling out the notion of a catalytic effect.

Extraction of numerous tissues, including malignant and benign tumors, indicates that all malignant and some benign tumors can give rise to follicle-stimulating substances in the urine but that malignant tumors of the genital organs most usually do so. All forms of chorionic tissue appear to cause the excretion of a gonadotropic substance in the urine. Tumor patients fall into two categories in regard to urine: (1) those producing urines that have an action similar to fresh hypophyseal implants in giving predominantly follicle stimulation (carcinomas) and (2) those producing urines containing follicle-stimulating and luteinizing hormones similar to pregnancy urines (teratomatas, chorionepitheliomas, hydatidiform moles, or any other chorionic derivatives). Repeated examination of negative urines is recommended, since in castrates the output of these hormones appears variable. They have been detected up to twenty years after surgical or roentgen castrations and after the menopause.

The book is a valuable contribution as a standard for such clinical examinations, for the introduction of methods, for ideas and for new material.

Medicine: A Voyage of Discovery. By Josef Löbel, M.D. Translated from the German by L. Marie Sieyking and Ian F. D. Morrow. Cloth. Price, $3. Pp. 334. New York: Farrar & Rinehart, 1934.

The voyage of discovery, with fifteen ports of call, namely, medicine, biology, anatomy, physiology, pathology, pharmacology, cellular pathology, bacteriology, serology, surgery, stimulative therapy, endocrinology, the theory of constitution, psychoanalysis, personality and back again to medicine, is, in brief, the plan of Löbel's book. It is a series of essays under the titles listed and it deals briefly with each of the important divisions of medicine. It presents little or nothing that is new nor does it pretend to, but it furnishes a well rounded summary of the important sciences contributory to modern medicine. It is scholarly without being prosy, entertaining without being superficial. Only one important error mars the book and that is one of translation involving confusion between the terms typhus and typhoid, a confusion that is readily enough understood by the reader who is familiar both with German and English and with typhus and typhoid. For the audience to whom the book is addressed, however, it should be made clear that the German typhus is the English typhoid. This is the kind of book on medicine which well informed lay persons may read with pleasure and profit. It should promote a better appreciation of

medical science on the part of the intelligent lay public. It should also be excellent supplementary reading for such cultural courses in science as aim merely at giving a general acquaintance without delving deeply into technicalities. The style is fresh, interesting and vigorous. The book is well made and well indexed.

Handbuch der Chemotherapie. Von Dr. Viktor Fischl, auswärtiger wissenschaftlicher Mitarbeiter der Schering-Kahlbaum A.-G., Berlin, und Prof. Dr. Hans Schlossberger, Mitglied des Reichsgesundheitsamtes, Berlin-Dahlem. Teil 2: Metallderivate. Paper. Price, 55 marks; 89 marks for the 2 volumes. Pp. 359-898. Leipzig: Fischers medizinische Buchhandlung, 1934.

This volume completes a veritable Baedeker through "Paul Ehrlich Land," a continent opened up to science only a quarter of a century ago and already possessing a bibliography that defies the efforts of any one individual. This result of the fortunate cooperation of the chemist Viktor Fischl and the physician Hans Schlossberger is destined to become, by reason of its thoroughness, the indispensable basis for scientific excursions into this fascinating domain. The present volume deals with the metal derivatives, as the first volume took care of the metal-free organic compounds. As is fit, from a historical standpoint, the treatise on arsenic occupies almost 200 pages, or one fourth of this volume, and it boasts of a bibliography occupying more than thirty-four pages in double column.

Coccidia and Coccidiosis of Domesticated, Game and Laboratory Animals and of Man. By Ellery R. Becker, D.Sc., Associate Professor of Protozoology, Iowa State College. Monograph Number 2, Division of Industrial Science, Iowa State College. Fabrikoid. Price, $2.50. Pp. 147, with 25 illustrations. Ames, Iowa: Collegiate Press, Inc., 1934.

The coccidia receive much attention because they cause heavy losses in mammals and birds, domestic and wild, in the temperature zone. Their rôle in man is insignificant. Becker's book gives an excellent summary, with helpful host catalogue and bibliography, of the present knowledge of coccidial species, host specificity, life cycles, pathogenicity, immunity, prevention and treatment.

Pharmaceutical Formulas. P. F. Vol. I. Being "The Chemist and Druggist" Book of Selected Formulas from the British, United States and Other Pharmacopoeias, Together with Non-Official Formulas from Various Sources, Including Numerous Descriptions of Practical Methods Employed in the Manufacture of Pharmaceutical Preparations and Other Information of Use to Pharmacists and Manufacturers, Comprising also a Selection of Formulas for "Known, Admitted, and Approved Remedies" from Former Editions and from "The Chemist and Druggist" Diaries. By S. W. Woolley and G. P. Forrester, Editor of "The Chemist and Druggist." Tenth edition. Cloth. Price, 15s. Pp. 1146. London: Chemist & Druggist, 1929.

Pharmaceutical Formulas. P. F. Vol. II, Being the Chemist's Recipe Book of Formulas for Adhesives, Beverages, Cleaning Materials, Culinary and Household Requisites, Horticultural and Agricultural Preparations, Inks, Lozenges, Perfumes, Photographic Preparations, Polishes, Soaps, Toilet Articles, Varnishes, Veterinary Preparations, etc., Including Numerous Descriptions of Practical Methods Employed in Their Manufacture and Other Information of Use to Pharmacists and Manufacturers. By G. P. Forrester, F.C.S. Tenth edition. Cloth. Price, 15s. Pp. 982. London: Chemist & Druggist, 1934.

These books constitute a veritable treasury of formulas collected by the editor of the *Chemist and Druggist*. Volume I contains a comprehensive collection of official and nonofficial formulas selected from the British, United States and other pharmacopeias, hospital formularies and the current pharmaceutic literature. Volume II contains chiefly formulas that cannot properly be classified as medicinal. It includes chapters dealing with perfumes, toilet preparations, dental preparations, household and culinary requisites, horticultural and agricultural preparations, adhesives, paints, stains and varnishes. These two volumes should certainly be in all libraries of pharmaceutic and medical colleges. They would soon repay for their purchase in almost any one of the larger and busier retail pharmacies. To illustrate the thoroughness with which many of these topics are treated, one might turn to the chapter on perfumes, which extends over almost a hundred pages, giving one a veritable introduction into the secrets of the production of bouquets and essences from handkerchief perfumes and toilet waters to sachet powders and perfumed cards and papers. The art of combining synthetic perfume constituents is discussed in practical detail, as are also the ingredients required for "fixation" of perfumes such as musk and ambergris. To review these books in detail is as impossible as to review a dictionary.

L'acidose et l'insuffisance rénale aiguë chez le nourrisson. Par Max M. Lévy. Paper. Price, 15 francs. Pp. 103. Paris: Masson & Cie, 1932.

In this short manual the author reviews the theories on acidosis and alkalosis in infancy and points out the practical application in various clinical conditions. Examinations of the alkali reserve of the blood and acidity of the urine in pyloric stenosis, acute renal insufficiency and other conditions are given, with examples. The author advises the administration of sodium chloride in hydrochloremia and the injection of sodium bicarbonate in hypochloremia. The author explains that simple blood determinations will indicate whether sodium chloride or sodium bicarbonate is indicated, but there are probably many other physiologic factors involved, and the whole mechanism is more complicated than the author assumes.

External Diseases of the Eye. By Donald T. Atkinson, M.D., Consulting Ophthalmologist to the Santa Rosa Infirmary and the Nix Hospital, San Antonio, Texas. Cloth. Price, $7.50. Pp. 704, with 479 illustrations. Philadelphia: Lea & Febiger, 1934.

A volume of this type limiting itself to external disease of the eye is a distinct contribution to the English speaking physician. The author stresses the lesions of the skin in the neighborhood of the eye and a correlation between ophthalmology and dermatology is established. The numerous engravings help to make the book readable. The author illustrates the lesions adequately with drawings and models. A word of praise must be spoken for one endowed with artistic talent, who has used much time and effort to visualize for others. The references are sadly inadequate for the amount of material covered in the text; they are for the most part ancient and they do not include the available rich supply of relevant foreign literature. Some of the methods described are wholly empirical, and others are out of date. A cursory perusal reveals that many of the references are inaccurate. Some of the procedures that are described are lacking in facts; in certain cases actual misstatements are made. Ethylhydrocupreine hydrochloride, a specific drug, is not mentioned in the treatment of pneumococcic conjunctivitis or in the list of antiseptics. The collection of photographs from many ophthalmologists and dermatologists in various parts of the country gives a certain value to the book. The illustrations of operative procedures are better than none at all but are reproduced in a size too small to be of great advantage. The volume covers fully the field it represents.

I Know Just the Thing for That! By J. F. Montague, M.D., Medical Director, New York Intestinal Sanitarium. Cloth. Price, $2. Pp. 265. New York: John Day Company, 1934.

"For patients without doctors and doctors without patience" is the subtitle, which perhaps best expresses the respect in which this book is weak. With one or two notable exceptions, attempts to write medical books for both doctors and patients have failed, because the approach to one group is entirely different from the approach to the other. This book is a treatise on constipation and its allied and related ills. There is much excellent material in it, particularly in the first half of the book, but the subject could have been handled more expeditiously and there is a question whether any one afflicted with constipation can be benefited by reading about it to the extent of 265 pages. The book is cleverly written in spots but in general could have been greatly condensed without loss of any essential material. The discussion of vitamins, in which cod liver oil is totally omitted, is inadequate and misleading. It is, on the whole, a useful book but not one to arouse enthusiasm.

Bernardino Ramazzini nel III centenario della nascita (1633-1933). Milano, 4 Ottobre 1933. Commissione Internazionale Permanente per la Medicina del Lavoro (sezione Italiana). Società Italiana di Medicina del Lavoro. Paper. Price, 6 lire. Pp. 95. Milan: Tipografia Antonio Cordani S. A., 1934.

This pamphlet, published by the Italian Society of Occupational Medicine, is an interesting review of the work of the great founder of modern occupational medicine. It contains some appreciative messages from Professor Butler of the International Labor Bureau and the lectures by Professor Martin of the University of Lyons, Professor Zangger of Zurich and Professor Oliver of Great Britain, Professor Gudjonsson of Copenhagen, and others from leading occupational clinics. The address of Professor Devoto, the "Grand Old Man" of occu-

pational medicine, Milan, is inspiring. All the other short addresses portray some interesting side lights on the life of this remarkable teacher, whose intuitions on the pathologic lesions induced by various occupations mark him as a clinician of the first order.

Medicolegal

Workmen's Compensation Acts: Disability Resulting from Operation to Alleviate Industrial Injury Compensable.—The employee sustained a hernia in the course of his employment. Two operations failed to reduce the hernia and the employee was totally disabled. He instituted proceedings before the state industrial commission to recover compensation under the Oklahoma workmen's compensation act. The employer then proffered and the employee submitted to a third operation and the commission continued the proceedings pending the outcome of the operation. The hernia was alleviated as a result of the operation, but in performing it the operating physician transplanted the spermatic cord from its natural position. As a result it was pinched and interfered with in such a way as to cause the cord and the right testicle to atrophy. Later the commission held a hearing in the proceedings that had been continued and awarded the employee compensation for the injury to the testicle and cord. The employer brought an action in the Supreme Court of Oklahoma to review that award.

When an employer has knowledge of the facts of a compensable injury, said the Supreme Court, he becomes charged with knowledge of the extent of disability resulting from the original injury. It was not necessary in this case, to give the commission jurisdiction to consider the evidence on which to base the award, that the employee file a specific claim for compensation for the disability resulting from the third operation. Under the Oklahoma workmen's compensation act, an employer is liable for all legitimate consequences following an accident, including unskilfulness or error of judgment of a physician furnished the injured employee by the employer. An injured employee who submits to an operation tendered by his employer for the purpose of restoring the employee's earning capacity is entitled to compensation for any disability that may follow as a result of the operation. The Supreme Court concluded that the industrial commission had jurisdiction and had properly awarded compensation.—*Skelton Lead & Zinc Co. v. Bagby (Okla.), 27 P. (2d) 168.*

Workmen's Compensation Acts: Appendicitis Attributed to Septicemia Following Leg Injury.—Allen injured his leg in the course of his employment, September 12. The leg became infected and on September 21 Allen was taken to a hospital and an operation performed on the leg. Necrotic tissue and diseased periosteum were removed. After the operation, Allen's condition improved slowly, and his temperature subsided some, although he continued to suffer from pains throughout his body. On October 26 he left the hospital and thereafter was brought daily in an automobile to his physician's office for treatment. On November 20, Allen developed more temperature, became nauseated, and had "general pain" especially in the leg and abdomen. On November 27 he was readmitted to the hospital, suffering at that time with great pain in the lower part of the abdomen, especially in the right iliac region, and suffering at all times with his leg. On the following day an abdominal operation was performed. The appendix and colon were found to be ruptured. The abdomen was full of serofibrinous fluid and a mass of adhesions of the appendix and adjacent parts. Allen reacted badly, improved slowly for two days, and then gradually grew worse until December 3, when he died.

Allen's widow brought suit under the employers' liability act of Louisiana for compensation for his death, alleging that the death was due to septicemia resulting from the leg infection and to lowered resistance due to that infection. The employer and his insurance carrier contended that death was caused by a ruptured appendix and a general peritonitis which had no connection with the injury sustained on September 12. From a judgment for the widow, the defendants appealed to the court of appeals, first circuit, Louisiana.

The attending physician testified, said the court, that, from September 21, Allen suffered from a septicemia caused by the abrasion on his leg and that his power of resistance was thereby lowered; that the blood stream became infected, thereby infecting the appendix and colon. Two other physicians, called by the plaintiff, concurred in the conclusions reached by the attending physician. Five physicians called by the defendant disagreed with these conclusions, testifying that even if there had been a general infection, which they denied, the subsequent appendicitis and diseased colon had no relation thereto. Allen's death, they testified, was due solely to the delay to operate until after the appendix and colon had ruptured. The physicians called by the defendants, observed the court, had neither seen nor treated Allen. Their opinions were based on hypothetical questions. The opinion of the physician who personally attended the deceased and knew his condition from first hand information was entitled to more weight than the opinions of those who never saw him. *Arender v. Grant Timber Co., Inc.*, 9 La. App. 132, 119 So. 498. While the preponderance of medical opinion, continued the court, was to the effect that there should have been no delay in operating for the appendicitis, the widow must not on that account be denied the right to recover compensation. The physician who had personal charge of the case and first hand information as to the condition of the employee thought the delay was advisable. The opposing opinions were based on hypothetical questions, put to physicians who never saw the patient. Under the circumstances, the court said, such a difference of opinion is not ground for defeating a claim for compensation.

Furthermore, said the court, one of the physicians who testified for the defendants was in the employ and pay of one of the defendants. Article 2282, Civ. Code of Louisiana, provides:

> The circumstances of the witness being . . . in the actual service or salary of the parties, is not a sufficient cause to consider the witness as incompetent, but may, according to the circumstances, diminish the extent of his credibility.

If, observed the court, being employed by one of the parties is sufficient to diminish the credibility of the witness when testifying to matters of fact, the diminishment must be far greater when such witness is called on to express an opinion based on hypothetical questions. The court then quoted from Greenleaf on Evidence, volume 1, part 3, section 440b, as follows:

> In weighing the testimony of biased witness, however, a distinction is to be observed between matters of opinion and matters of fact. Such a witness, it is said, is to be distrusted, when he speaks of matters of opinion; but in matters of fact, his testimony is to receive a degree of credit in proportion to the probability of the transaction, the absence or extent of contributory proof and the general tone of his evidence.

The court, taking into consideration all the evidence, concluded that the accidental injury sustained by Allen, September 12, was "indirectly responsible and a causative factor, leading to and bringing about the death" of Allen. The judgment in favor of the widow was accordingly affirmed.—*Allen v. Louisiana Highway Commission (La.), 150 So. 98.*

Society Proceedings

COMING MEETINGS

American Association of Railway Surgeons, Chicago, August 20-22. Dr. Louis J. Mitchell, 21 East Van Buren Street, Chicago, Secretary.
American Ophthalmological Society, Lucerne-in-Quebec, Canada, July 9-11. Dr. J. Milton Griscom, 2213 Walnut Street, Philadelphia, Secretary.
Minnesota State Medical Association, Duluth, July 16-18. Dr. E. A. Meyerding, 11 West Summit Avenue, St. Paul, Secretary.
Montana, Medical Association of, Helena, July 11-12. Dr. E. G. Balsam, Box 88, Billings, Secretary.
National Medical Association, Nashville, Tenn., August 13-18. Dr. C. A. Lanon, 431 Green Street, South Brownsville, Pennsylvania, General Secretary.
New Mexico Medical Society, Las Vegas, July 19-21. Dr. L. B. Cohenour, 219 West Central Avenue, Albuquerque, Secretary.
Pacific Coast Oto-Ophthalmological Society, Butte, Mont., July 16-18. Dr. P. C. Cordes, Fitzhugh Building, San Francisco, Secretary.
Wyoming State Medical Society, Casper, July 16-17. Dr. Earl Whedon, 30 North Main Street, Sheridan, Secretary.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

54: 347-514 (May 15) 1934

Differentiation of Entire Young Rabbit Embryos in Omental Grafts. A. J. Waterman, Brooklyn.—p. 347.

Types of Subnormal Development of the Head from Inbred Strains of Guinea-Pigs and Their Bearing on the Classification and Interpretation of Vertebrate Monsters. S. Wright and K. Wagner, Chicago.—p. 383.

Experimental Studies on the Development of the Wing in the Embryo of Gallus Domesticus. A. E. Warren, Boston.—p. 449.

The Reproductive Cycle in the Female Ground Squirrel, Citellus Tridecemlineatus (Mitchill). M. A. Foster, Madison, Wis.—p. 487.

American Journal of Medical Sciences, Philadelphia

187: 589-736 (May) 1934

Relationship of Polycythemia to Duodenal Ulcer. W. Boyd, Winnipeg, Manit.—p. 589.

*Intestinal Intubation: Practical Technic. T. G. Miller and W. O. Abbott, Philadelphia.—p. 595.

*Endocrine Effects of Certain Ovarian Tumors. E. Novak, Baltimore.—p. 599.

Study of Anhydremia in Diabetic Coma. Elaine P. Ralli and Alice M. Waterhouse, with the technical assistance of Onna Rheinhart, New York.—p. 607.

Autogenous Vaccines in Rheumatoid Arthritis: Clinical Study and Critique. C. L. Short, L. Dienes and W. Bauer, Boston.—p. 615.

Specific Treatment of Septic Infections, Particularly with Aid of Bacteriophages. W. J. MacNeal, New York.—p. 623.

The Racial Factor in Pernicious Anemia: Study of Five Hundred Cases. R. D. Friedlander, Boston.—p. 634.

Observation on Practical Significance of Venous Pressure in Health and Disease with a Review of the Literature. G. C. Griffith, C. T. Chamberlain and J. R. Kitchell Jr., Philadelphia.—p. 642.

*Arteriovenous Fistula Involving the Common Femoral Artery Identified by Arteriography. B. T. Horton, Rochester, Minn.—p. 649.

Syndrome of Obstruction in the Lesser Circulation. J. J. Waring and W. C. Black, Denver.—p. 652.

Cor Biatriatum Triloculare with Rudimentary Right Ventricle, Hypoplasia of Transposed Aorta, and Patent Ductus Arteriosus, Terminating by Rupture of Dilated Pulmonary Artery. G. O. Favorite, Philadelphia.—p. 663.

Endocarditis Due to a Neisseria Pharyngis Organism. J. D. Goldstein, Rochester, N. Y.—p. 672.

New Method of Producing Heat in Tissues: The Inductotherm. J. R. Merriman, H. J. Holmquest and S. L. Osborne, Chicago.—p. 677.

One Hundred Obesity Diets on One Chart. W. S. Collens, Brooklyn.—p. 683.

*Symptomatic Relief of Emphysema by an Abdominal Belt. H. L. Alexander and W. B. Kountz, St. Louis.—p. 687.

Mechanism and Use of Abdominal Supports and Treatment of Pulmonary Diseases. B. Gordon, Philadelphia.—p. 692.

Treatment of Tetanus in Hospitals of Lancaster, Pa., over a Period of Thirty Years. Anna P. Klemmer and E. S. Crosland, Lancaster, Pa.—p. 700.

Modified Mercuric Chloride Reaction (Takata-Ara) in Cirrhosis and in Neoplasms of the Liver. M. P. Crane, Philadelphia.—p. 705.

Technic of Intestinal Intubation.—The technic of intubation, as Miller and Abbott have practiced it, is as follows: The tube with the bag deflated is taken by the fasting subject in the early morning, exactly as are gastric and duodenal tubes, only enough being swallowed at first to reach the stomach, and then, with the subject reclining on his right side, more is introduced slowly until the distal end has reached the duodenum. A little more tube is taken and fluoroscopic observations are made until the capsule has reached at least the third portion of the duodenum. The bag is distended moderately with air or an 8 per cent solution of sodium iodide (to render visualization of the tube and bag easier). After this the subject swallows about 5 cm. of tube every ten minutes, fluoroscopic observations being made from time to time until the distal end has reached the desired point. The authors found that within six hours the tube has usually passed along the intestine to a distance of from 120 to 150 cm. beyond the pylorus.

Endocrine Effects of Certain Ovarian Tumors.—Novak points out that certain tumors of the ovary, like tumors of other endocrine glands, are capable of highly developed endocrine function. The most clearly defined types are the granulosa-cell tumors and the so-called arrhenoblastomas, the latter belonging to the group of testicular adenomas, most often of atypical variety. The granulosa-cell tumors exert a feminizing effect, through the production of theelin by the tumor cells, so that in older women, perhaps far beyond the menopause, they produce most often a hyperplasia of the endometrium associated with periodic bleeding (pseudomenstruation), together with an increase in the size of the uterus. In the few cases seen in young children, they have produced the syndrome of precocious puberty, with precocious menstruation. The arrhenoblastomas, on the other hand, have a definitely masculinizing tendency, as might be expected from the fact that they apparently have their origin from undifferentiated epithelium in the region of the rete ovarii. Under conditions which are not clear, these cells, capable of development along either male or female lines, may assume definitely masculine tendencies, as in the group of tumors under discussion. The relation of this endocrine cause of partial sex reversal to the general problems of intersexuality, sex differentiation and sex reversal is obvious, although knowledge on these subjects is still far from complete. Patients suffering from arrhenoblastoma present in the extreme instances not only such manifestations of defeminization as amenorrhea and breast atrophy but also such evidences of masculinization as a masculine type of hair distribution, deepening of the voice and hypertrophy of the clitoris. The removal of the tumor brings about a regression of these symptoms.

Arteriovenous Fistula Identified by Arteriography.—Horton illustrates the importance of arteriography in determining the site of abnormal arteriovenous communications. With the history, the presence of a bruit and thrill over the right thigh and the bradycardiac reaction, the diagnosis of arteriovenous fistula of the acquired type seemed definitely established. The diagnosis was confirmed by the demonstration of a high admixture of arterial and venous blood in the right femoral vein. The site of the fistula could be determined only by means of arteriography, or by surgical exploration. The author believes that arteriography has been used for the first time in his case.

Symptomatic Relief of Emphysema by an Abdominal Belt.—Alexander and Kountz state that, in advanced obstructive emphysema, difficulty in breathing is due principally to mechanical factors. The large lungs hold the diaphragm in the position of inspiration and indirectly they also distend the chest to a barrel shape. Respiratory excursion is thereby limited. It has been found that the diaphragm can be pushed upward toward its expiratory position by means of abdominal pressure, properly applied. From this position contraction again occurs. In order to maintain adequate intra-abdominal pressure the authors have devised a belt. In a series of twenty-five patients with advanced obstructive emphysema to whom belts have been fitted, nineteen have been subjectively improved. The average increase in the vital capacity of the lungs has been 39 per cent. With improvement in respiratory function, the characteristically elevated intrapleural pressure of obstructive emphysema has been found to become more negative and thus approach more normal values.

American Journal of Ophthalmology, St. Louis

17: 387-474 (May) 1934

Retinal Vascular Dynamics. J. S. Friedenwald, Baltimore.—p. 387.

Amblyopia After Hemorrhage. A. S. Barr, Ann Arbor, Mich.—p. 396.

Detachment and Rupture of the Retina. A. Hagedoorn, Amsterdam, Holland.—p. 400.

The Keeler Decagon Ophthalmoscope as a Refractometer. C. Berens and C. K. McLaughlin, New York.—p. 402.

A Surgical Ultraviolet Lamp as an Aid to the Removal of Dislocated Lenses. H. R. Hildreth, St. Louis.—p. 414.

Intra-Ocular Foreign Bodies: Review of Eighty Cases. D. Marshall, Ann Arbor, Mich.—p. 416.

The Ciliary Processes: Their Relation to Intra-Ocular Surgery. A. B. Reese, New York.—p. 422.

A Simplified Lighting-Control System for the Operation of Optical Apparatus. E. Krimsky, Brooklyn.—p. 429.

American Journal of Surgery, New York

24: 199-546 (May) 1934

Metastases from Malignant Tumors of the Thyroid: Study of One Hundred and Twenty-Four Cases. R. S. Dinsmore and N. F. Hicken, Cleveland.—p. 202.
*Postoperative End Results in Three Hundred Thyrocardiacs. F. H. Lahey and L. M. Hurxthal, Boston.—p. 225.
Clinical Problems of Thyroid Disease in a Nonendemic Area. U. Maes, F. F. Boyce and Elizabeth M. McFetridge, New Orleans.—p. 232.
Carcinoma of the Breast: Study in Etiology and Prognosis. H. H. Trout, Roanoke, Va.—p. 258.
*Ovarian Hormones in Relation to Chronic Cystic Mastitis. D. Lewis and C. F. Geschickter, Baltimore.—p. 280.
Carcinoma and Other Tumors of the Male Breast. J. T. Moore, Houston, Texas.—p. 303.
Biopsy. J. C. Bloodgood, Baltimore.—p. 331.
Spontaneous Hypoglycemia: Report of Two Cases Associated with Fatty Metamorphosis of the Liver. E. S. Judd, E. J. Kepler and E. H. Rynearson, Rochester, Minn.—p. 345.
Some Usually Unrecognized Functions of the Liver. C. H. Mayo, Rochester, Minn.—p. 364.
Massive Apoplexy of the Liver. J. H. Taylor, Columbia, S. C.—p. 373.
Indications For and End Results in Three Hundred and Eight Denervations of the Adrenal Glands. G. Crile, Cleveland.—p. 378.
Living Grafts of Endocrine Glands. H. B. Stone, J. C. Owings and G. O. Gey, Baltimore.—p. 386.
*Cancer of the Breast: New Incision with a Review of the Technic. W. O. Bullock, Lexington, Ky.—p. 396.
Application of the Quarantine Drain in Abdominal Surgery. R. C. Coffey, Portland, Ore.—p. 417.
Concerning the Cause of Trigeminal Neuralgia. W. E. Dandy, Baltimore.—p. 447.
Chronic Sacro-Iliac Sprain with Attendant Sciatica. R. H. Jackson, Madison, Wis.—p. 456.
Fracture of the Tibial Spine. C. S. Venable, San Antonio, Texas. —p. 478.
Surgery of the Aged. F. W. Bailey, St. Louis.—p. 487.
Regeneration of Nerves in Skin Grafts and Skin Flaps. J. S. Davis and E. A. Kitlowski, Baltimore.—p. 501.

Postoperative End Results in Thyrocarditis.—Lahey and Hurxthal present evidence to prove that thyrocardiac patients in seemingly hopeless stages of decompensation can by subtotal thyroidectomy not only have their compensation restored but themselves be rehabilitated to a degree that permits normal activities in most of the cases. Their follow-up studies prove that at least 71.5 per cent of patients with auricular fibrillation can be restored to and remain in normal rhythm following the removal of their hyperthyroidism; that the mortality, 4.25 per cent, is relatively low for this serious situation and that compensation is restored and persists in at least 95 per cent of the patients.

Ovarian Hormones in Relation to Cystic Mastitis.—Lewis and Geschickter present the analysis of 600 cases of chronic cystic mastitis. There are two types of the disease: one in which cyst formation predominates (referred to as cystic disease of the breast) and the other one in which epithelial hyperplasia predominates (referred to as adenosis of the breast). Their study of the breast tissue of women at various known periods of the menstrual cycle and of pregnancy, and of animals which have been injected with theelin or theelin and progestin combined, reveals that the changes are fundamentally the same. The age period at which chronic cystic mastitis is most common corresponds with the age period at which these two hormones are most active. The tendency of the cysts to vary in size and for the symptoms to be exaggerated in the premenstrual period is an expression of periodic variations of the secretory levels of theelin and progestin. Undeveloped tubules and acini in the adult breast may respond abnormally during the menstrual cycle and form the basis for the later development of cystic disease and adenosis. Under the intense hormone stimulation of pregnancy, normal development may be resumed. During pregnancy the lesions associated with chronic cystic mastitis disappear frequently. The eventual disappearance of the majority of all undeveloped tubules and acini after repeated pregnancies accounts for the fact that chronic cystic mastitis is rarely encountered in women who have borne many children. These observations also account for the frequent occurrence of cystic disease in married women who have not borne children and in the unmarried. The persistence of these structures through one or two pregnancies accounts for the disease in women who have borne few children. From the study of tissue in experimental animals after the injection of theelin, and theelin and progestin combined, and of human material obtained at definite known periods of the menstrual cycle and pregnancy, the authors believe that these changes in the apparently normal breast are due to variation in amount or periodic discharge of the ovarian hormones (theelin and progestin). Histologically, these changes are not unlike those occurring in cystic disease of the breast and adenosis. Therefore they believe that they are justified in drawing the conclusion that these pathologic states of the breast are caused by alteration in character, amount or periodic discharge of the ovarian hormones.

Incision for Cancer of the Breast.—For several years, Bullock has employed an incision in operations for cancer of the breast which starts at the ensiform and extends toward the shoulder to the level of the tip of the coracoid with a varying degree of straightness and obliquity, dependent on whether the growth is in the inner or outer half of the breast; to this is added the transverse elliptic incision of Stewart, or part of it, likewise dependent on the location of the growth. The outer end of this transverse incision is carried well back of the fibers of the latissimus. This forms, when dissected back, two broad based flaps, allows ample exposure of the chest wall and the axilla, is easy to close, does not sear the arm or shoulder and after healing is drawn well outward. A separate stab wound is unnecessary as drainage is established through the back end of the transverse cut. The incisions may be modified in direction and length to meet the requirements of the case. The towel clip, grasping an unaffected part used to lift up the breast while its lower surface and the skin in contact with it is painted, is left in place. By means of the clamp the breast is deployed in various directions and it is never necessary to touch the breast with the hand.

Annals of Medical History, New York

6: 93-192 (March) 1934

Progress and Pioneers of Preventive Medicine. H. Rolleston, Haslemere, Surrey, England.—p. 95.
Two Notable Controversies: Over the Invention of the Electric Telegraph and the Discovery of Surgical Anesthesia. A. H. Miller, Providence, R. I.—p. 110.
Glimpse of Seventeenth Century Medicine. L. Thorndike, New York. —p. 124.
"That Remarkable Philosopher and Physician, Wells of Charleston:" The First Exponent of the Theory of Natural Selection, Discoverer of the Nature of Dew, and Physician. F. L. Pleadwell, Honolulu, T. H.—p. 128.
Galen's Writings and Influences Inspiring Them. J. Walsh, Philadelphia.—p. 143.
Shakespeare's Medical Knowledge, with Particular Reference to His Delineation of Madness: Preliminary Survey of Critical Opinion. I. I. Edgar, Detroit.—p. 150.
Medical Allusions in Don Quixote. J. R. Head, Chicago.—p. 169.
Medical Wisdom of Bret Harte. L. J. Bragman, Syracuse, N. Y.—180.

Archives of Dermatology and Syphilology, Chicago

29: 645-804 (May) 1934

*Acetarsone in the Treatment of Neurosyphilis. L. H. Griggs, Syracuse, N. Y., and J. F. Schamberg, Philadelphia.—p. 645.
Kahn Reaction with Spinal Fluids Containing Varying Amounts of Syphilitic Blood. A. B. Loveman, Louisville, Ky., and Louise Stocking, Ann Arbor, Mich.—p. 653.
Rattlesnake Anaphylaxis Associated with a Generalized Dermatitis. C. R. Lounsberry, San Diego, Calif.—p. 658.
Xeroderma Pigmentosum: Report of Case. C. M. Canright, Cranford, N. J.—p. 668.
Factors Involved in Leather Dermatitis. H. Beerman, Philadelphia. —p. 671.
Sulpharsphenamine in the Treatment of Warts. H. V. Allington, San Francisco.—p. 687.
*Acanthosis Nigricans: Case of the Benign Form in an Adult Investigated from the Aspect of Endocrine Dysfunction. A. W. Grace and H. J. Schwartz, New York.—p. 691.
Thrombopenia in Acute Disseminated Lupus Erythematosus. H. J. Templeton, Oakland, Calif.—p. 700.
Leukonychia and "Colds" Secondary to Disturbances of Metabolism. E. M. Josephson and C. Lerner, New York.—p. 703.
Acne in One of Identical Twins. W. A. Pusey and H. Rattner, Chicago.—p. 706.
Lipid Partition and the Albumin-Globulin Ratio in Syphilis. I. Rosen, Frances Krasnow and M. A. Lyons, New York.—p. 707

Acetarsone in the Treatment of Neurosyphilis.—Griggs and Schamberg gave intravenous injections of acetarsone to seventeen patients, all of whom showed symptoms of neurosyphilis from a clinical or laboratory point of view. Most of the patients improved subjectively, i. e., obtained relief from the radiating pains. The drug seemed to have a tonic effect. One patient gained 15 pounds (6.8 Kg.). In most cases the

condition of the spinal fluid was improved. Reports of a favorable action on the Wassermann and Kahn tests of the blood were noted in some of the cases. In two patients with small veins, occasionally a small part of the dose was given extravenously with no untoward symptoms.

Acanthosis Nigricans.—Grace and Schwartz report a case of acanthosis nigricans. Frequent clinical observations were made, supplemented by laboratory procedures. The authors believe the case to be one of juvenile acanthosis nigricans in an adult. The clinical symptoms, other than the cutaneous picture, were faintness, fatigability, vague epigastric pains, loss of appetite and a loss in weight of 10 pounds (4.5 Kg.) within seven months. Laboratory examinations revealed a low blood pressure, a high sedimentation rate of the red blood cells and complete achlorhydria. The high sedimentation rate in this case can be accounted for by the presence of a certain amount of fissuring and infection at the base of the overgrown papillae of the axillae, groins and feet or by the condition of the teeth. The weakness complained of may be ascribed to the low blood pressure, and this in turn may follow the exceedingly poor dentition which prevents the patient from having any but the softest foods. There was a diminution of the gonadotropic factor of the anterior pituitary-like substances of the urine, but this was accounted for by the approaching menopause. The only constant observations in the four cases reported by Wieder, Knowles and his co-workers and Burgess is hypo-acidity of the gastric content, and it is possible that this may be significant in acanthosis nigricans, although Bennett and Ryle showed that 4 per cent of normal persons have no free hydrochloric acid in their gastric juice. There is no apparent connection between the acidity of the gastric content and the endocrine system. The "increased sugar tolerance" in Wieder's case is so slight as to be almost within the range of normal. The figures quoted for the basal metabolic and pulse rates in the same case are normal, and the cessation of menstruation in a girl of 13 during the period of hospitalization is scant evidence of ovarian dysfunction. The authors believe that there is as yet no support for the hypothesis of endocrine dysfunction as an etiologic or concomitant agent in juvenile acanthosis nigricans. If juvenile acanthosis nigricans cannot be linked with the endocrine system, the form associated with a malignant process must be considered to be a different disease or the hypothesis of endocrine dysfunction in both forms of the disease should be abandoned. As the clinical and histologic picture of acanthosis nigricans is the same in all cases, regardless of the age of onset or of the presence or absence of a malignant process, the authors prefer to regard the disease as a single entity and to view as unfounded the hypothesis of endocrine dysfunction as an etiologic agent.

Archives of Ophthalmology, Chicago

11: 751-932 (May) 1934

Iridencleisis in Buphthalmos. S. R. Gifford, Chicago.—p. 751.
*Diabetic and Tobacco Amblyopia: Report of Case. C. E. G. Shannon and L. F. McAndrews, Philadelphia.—p. 757.
Retinitis Punctata Albescens and Retinitis Pigmentosa as Affected by Pregnancy: Report of Case. R. H. Henderson, Wilmette, Ill.—p. 763.
Importance of Cephalalgia in Ocular Diagnosis. B. L. Gordon, Atlantic City, N. J.—p. 769.
Effect of Intra-Ocular Tension of Corneal Massage with the Tonometer of Schiötz. J. Bock, P. C. Kronfeld and J. T. Stough, Chicago. —p. 797.
Calculating Stereoscopic Vergence. J. I. Pascal, New York.—p. 807.
O'Connor Cinch Shortening Operation for Heterotropia and Heterophoria: Critical Survey. G. N. Hosford and A. M. Hicks, San Francisco.—p. 814.
*Pseudoxanthoma Elasticum and Angioid Streaks: Report of Case. M. W. Jacoby, Cleveland.—p. 828.
Treatment of Mooren's Ulcer. F. W. Dean, Council Bluffs, Iowa. —p. 832.

Diabetic and Tobacco Amblyopia. — Shannon and McAndrews point out that a person may be a heavy drinker and smoker for years and never notice any depreciation of vision. A diabetic person may go through life and suffer no visual disturbance. However, if the heavy smoker and drinker acquires diabetes, this relative immunity is apt to change. They report a case which exemplifies this apparent relationship between diabetes and toxic amblyopia. As to the cause of diabetes in this patient, they can only guess. Lichwitz and von Noorden believe that persons suffering from alcoholism are susceptible to diabetes. The authors believe that the case they report is one of toxic amblyopia, precipitated in some way by the onset of diabetes.

Pseudoxanthoma Elasticum and Angioid Streaks.—Jacoby reports a case of pseudoxanthoma elasticum and streaks of the retina with the ocular changes illustrated by stereoscopic photographs. It would appear that trauma may be an exciting factor in exacerbations of an already existing disease. Intercurrent infections elsewhere may be hastening factors in senile elastosis but they are not necessarily the true etiologic factors. The stereophotographs seem to establish definitely that the streaks are due to veins which have undergone modification in an altered collateral circulation.

Canadian Medical Association Journal, Montreal

30: 473-588 (May) 1934

Chemical Nature of the Fat Soluble Vitamin of Growth: Phytol, Carotene, Vitamin A. M. Javillier, Paris, France.—p. 473.
Thyrotoxicosis and the Autonomic System. A. Crotti, Columbus, Ohio. —p. 479.
Etiology of Undulant Fever in Canada: Brucella Abortus Isolated from Two Cases in Quebec. R. Thompson, Montreal.—p. 485.
Clinical Application of Hematology to Infants and Children. C. E. Snelling and A. Brown, Toronto.—p. 488.
*Vectors of Relapsing Fever in Relation to an Outbreak of the Disease in British Columbia. E. Hearle, Kamloops, B. C.—p. 494.
Indications for Abdominal Cesarean Section and the Low Cervical Operation. W. J. Stevens, Ottawa, Ont.—p. 498.
Hodgkin's Disease with Marked Eosinophilia: Case. D. F. Coburn and J. E. Pritchard, Montreal.—p. 503.
Paroxysmal Ventricular Tachycardia Complicating Complete Heart Block: Report of Case. G. F. Strong, Vancouver, B. C.—p. 507.
Papillary Growths of the Renal Pelvis. D. W. MacKenzie, Montreal. —p. 509.
Bilirubin Formation and Reticulo-Endothelial System: III. Functional Block of the Reticulo-Endothelial System. R. Gottlieb, Montreal. —p. 512.
*Epidermoid Cyst in Bone. J. H. Couch, Toronto.—p. 516.
Cyanosis in Nitrous Oxide-Oxygen Anesthesia in Man. B. B. Raginsky and W. Bourne, Montreal.—p. 518.
The Early Diagnosis and Treatment of Carcinoma of the Uterine Cervix. A. B. Whytock, Niagara Falls, Ont.—p. 522.
Concomitant Squint. W. H. M. Thomson, London, Ont.—p. 524.
Poliomyelitis in the City of Quebec in 1932. E. Couillard, Quebec. —p. 527.
Sialolithiasis. C. H. A. Walters, Belleville, Ont.—p. 533.

Vectors of Relapsing Fever.—From the point of view of arthropod vectors, Hearle discusses an outbreak of relapsing fever, recorded by Palmer and Crawford as the first occurring in Canada. The common "wood tick," Dermacentor andersoni Stiles, suggested by the authors, is discarded as a possibility in the particular cases cited, since the period of adult activity of this species in British Columbia is from March to May, whereas the cases occurred mainly in late July and August, long after this tick has estivated. Other native ticks commonly attacking man are unknown in this part of British Columbia, and the suggestion is advanced that one of the well known Argasine vectors of the spirochete, such as Ornithodorus talaje or O. turicata, may have been introduced from the southwestern part of the United States or from Mexico. Argas persicus is recorded from Canada for the first time and new hosts are recorded for Ixodes auritulus. Pack rats, Neotoma cinera, are discussed as possible factors in the disease, both as reservoirs for the spirochetes and as hosts maintaining the ticks when the summer camps are untenanted.

Epidermoid Cyst in Bone.—Couch states that there is a typical clinical picture of epidermoid cysts in bone. The history, clinical and roentgen observations are so characteristic that a definite preoperative diagnosis can be made. The complaint is of sudden pain over the terminal phalanx, brought about by slight pressure and coinciding with a fracture of the cortex over the cyst. The tenderness persists. The patient usually recalls a rather severe crushing or puncture injury some time in the past, and on examination the affected part is found to be tender, with one point of maximal tenderness over the fractured cortex. Comparison with the normal side will show a thickening of the phalanx. Roentgenograms reveal a definite clear cut, smooth-walled cyst, which produces atrophy and destruction of nearby bone by pressure. The cortex is thin over the cyst and may be lacking on one side. If there is a history of recent sudden pain on slight pressure, a fracture through the cortex will be seen. The presence of the cyst destroys the phalanx, leaving the cyst covered with a thin shell. But it

also must stimulate bone production, for the whole phalanx is larger than normal and gives the appearance of having been "expanded" by the cyst; new bone must therefore have been laid down outside, as it was eroded inside. The most effective treatment is to remove the cyst intact. The advisability of placing a bone graft in this cavity has been considered, but experience has shown that it is unnecessary if the part is protected from further fracture for three weeks. If untreated, the cysts progress and destroy the affected part of the phalanx. They burst through the cortex and spread in the soft tissue, necessitating amputation. They respond to treatment and may be cured with no likelihood of recurrence. The author reports a case of epidermoid cyst in the bone.

Johns Hopkins Hospital Bulletin, Baltimore

54: 315-382 (May) 1934

Observations on the Pathology of High Tone Deafness. S. J. Crowe, S. R. Guild and L. M. Polvogt, Baltimore.—p. 315.

Journal of Experimental Medicine, New York

59: 529-686 (May 1) 1934

Histology of Equine Encephalomyelitis. E. W. Hurst, Princeton, N. J. —p. 529.

Failure to Neutralize the Poliomyelitis Virus with Serums of Adult Macacus Rhesus and of Young Female Rhesus Treated with Anterior Pituitary Extracts. N. P. Hudson, E. H. Lennette and E. Q. King, Chicago.—p. 543.

Studies on Meningococcus Infection: VI. The Carrier Problem. G. Rake.—p. 553.

Selection with the Magnet and Cultivation of Reticulo-Endothelial Cells (Kupffer Cells). P. Rous and J. W. Beard, New York.—p. 577.

Characters of Kupffer Cells Living in Vitro. J. W. Beard and P. Rous, New York.—p. 593.

Experimental Type III Pneumococcus Pneumonia in Monkeys: I. Production and Clinical Course. T. Francis Jr. and E. E. Terrell, New York.—p. 609.

Id.: II. Treatment with an Enzyme Which Decomposes the Specific Capsular Polysaccharide of Pneumococcus Type III. T. Francis Jr., E. E. Terrell, R. Dubos and O. T. Avery, New York.—p. 641.

*Louping Ill in Man. T. M. Rivers and F. F. Schwentker, New York. —p. 669.

Louping Ill in Man.—Rivers and Schwentker describe four instances of infection in man that are believed, because of the circumstances under which they occurred and in view of the results of neutralization tests, to represent cases of louping ill. Evidence obtained by the neutralization tests is in favor of the idea that the antibodies against louping ill virus demonstrated in certain serums were most likely the result either of contact with or of infection with the active agent.

Journal of Immunology, Baltimore

26: 247-352 (April) 1934

*Experimental Observations on the Antigenic Potency of Haemophilus Pertussis Extracts. J. J. Miller Jr., Copenhagen, Denmark.—p. 247.

Studies on Vascularization of the Cornea: I. Sensitization of the Cornea of Rabbits to Bacteria. L. A. Julianelle, M. C. Morris and R. W. Harrison, St. Louis.—p. 267.

Id.: II. Sensitization of the Cornea of Rabbits to Proteins. L. A. Julianelle, M. C. Morris and R. W. Harrison, St. Louis.—p. 281.

Id.: III. Sensitization of the Cornea of Monkeys. L. A. Julianelle, R. W. Harrison and M. C. Morris, St. Louis.—p. 295.

Id.: IV. The Question of Passive Corneal Hypersensitiveness. L. A. Julianelle, M. C. Morris and R. W. Harrison, St. Louis.—p. 303.

The Serum Antibody Titer of Macacus Rhesus Following Repeated Inoculations of Yellow Fever Virus. W. Lloyd and A. F. Mahaffy, Lagos, Nigeria.—p. 313.

Absorption of Phage by Bacilli. P. Levine, A. W. Frisch and E. V. Cohen, Madison, Wis.—p. 321.

Antigenic Potency of Haemophilus Pertussis Extracts.—Miller compared the antigenic potency of extracts of Haemophilus pertussis with standard pertussis vaccine. The titer of complement fixing antibodies in rabbits after the injection of these agents was the index used. The observations suggest that fresh extracts of recently isolated strains produce a more rapid rise in titer than does vaccine. The addition of formaldehyde, chinosol and tricresol to these extracts delays the response. Filtration of the extract through a Berkefeld L_4 filter removes the antigen. A more rapid response occurs with the small quantity of extract prepared from a given amount of concentrated bacterial suspension than with the large quantity of standard vaccine prepared from the same amount of concentrated bacterial suspension. Therefore the greater concentration of the antigen in the extract is not the factor responsible for the rapid rise obtained. The unfixed and extracellular state of the antigen is the factor responsible. The antigenic component of H. pertussis endotoxin is relatively thermostabile whereas the toxic component is inactivated by temperatures of 37 C. and higher. The author points out that the foregoing data should be verified by further study for they constitute supportive experimental evidence for the trial of H. pertussis extract in the prophylaxis and treatment of pertussis.

Journal of Industrial Hygiene, Baltimore

16: 147-200 (May) 1934

A Cause for the Decrease in the Number of Ions in Air of Occupied Rooms. G. R. Wait, Washington, D. C.—p. 147.

The Action of Mica Dust on Pulmonary Tissue. A. Policard, Lyons, France.—p. 160.

Roentgen Technic, with Especial Reference to Examination to Diagnose or Exclude Silicosis. H. K. Pancoast and E. P. Pendergrass, Philadelphia.—p. 165.

Sericite in Foundry Dust. C. S. Hurlbut Jr. and D. S. Beyer, Boston. —p. 169.

Quantitation of Impinger Dust Samples by Dark Field Microscopy. T. Hatch, Boston, and C. L. Pool, Providence, R. I.—p. 177.

An Atmospheric Dust Recorder. W. G. Hazard and P. Drinker, Boston. —p. 192.

Journal of Lab. and Clinical Medicine, St. Louis

19: 799-916 (May) 1934

*Etiology of Granulopenia (Agranulocytosis), with Particular Reference to the Drugs Containing the Benzene Ring. R. R. Kracke and F. P. Parker, Emory University, Ga.—p. 799.

Blood Iodine Studies: II. Normal Iodine Content of Human Blood. C. B. Davis, Lincoln, Ill.; G. M. Curtis and Versa V. Cole, Columbus, Ohio.—p. 818.

The Sedimentation Rate and Polymorphonuclear Count in Rheumatoid and Mixed Arthritis: Their Value as an Index to Activity. W. B. Rawls, B. J. Gruskin, A. A. Ressa and Marie Jordon, New York. —p. 830

Bactericidal and Fungicidal Action of Homologous Halogen Phenol Derivatives and Its "Quasispecific" Character: I. Derivatives of Parachlorophenol. E. Klarmann, V. A. Shternov and L. W. Gates, Bloomfield, N. J.—p. 835.

Normal Erythrocyte, Hemoglobin and Packed Cell Volume Standards in Young Men: Study of One Hundred Subjects. O. S. Walters, Lawrence, Kan.—p. 851.

Wuchereria (Filaria) Bancrofti Infection in Man with an Unusual History: Case Report. H. A. Poindexter and R. F. Jones, Washington, D. C.—p. 864.

The Toxin of Bacillus Proteus. H. Randolph, Phoenix, Ariz.—p. 870.

*Cocaine Poisoning as Influenced by Diets: Preliminary Report. A. J. Nedzel, Chicago.—p. 875.

Nasopharyngeal Flora and Some Remarks as to Their Relation to Common Colds. K. Yardumian and Estelle Logan Lightner, Pittsburgh. —p. 877.

*Simplified Microdetermination of Cholesterol in Whole Blood, Serum and Plasma. J. Kamlet, Brooklyn.—p. 883.

Examination for Tubercle Bacilli. Mary Van S. McCoy, New York. —p. 885.

Hemoglobin and Blood Cell Relations as Determined by Iron and Oxygen Capacity Methods. G. O. Broun and A. P. Briggs, St. Louis. —p. 886.

Comparison of Methods for the Determination of Uric Acid in Human, Bovine and Avian Bloods. G. H. Pritham and A. K. Anderson, State College, Pa.—p. 892.

Blood Iodine Studies: III. A Simple Reservoir Buret for Making Microtitrations. F. J. Phillips and G. M. Curtis, Columbus, Ohio. —p. 896.

Cage for Mice and Rats. A. W. Blair and E. B. Carmichael, University, Ala.—p. 898.

Maintaining Water and Air Balance During Prolonged Incubation: Experiences Gained from Growing Tubercle Bacilli. H. J. Corper and M. L. Cohn, Denver.—p. 899.

Etiology of Granulopenia.—Kracke and Parker point out that it seems reasonable that a certain proportion of granulopenia is due to arsphenamine and a certain percentage to gold salts and perhaps other chemicals, leaving, however, a large group of the idiopathic type with an unknown etiology. The disease is more prevalent among physicians and their relatives, nurses, hospital employees and members of the allied professions than in any other group of people in the United States. It is essentially a disease of the white race. Its distribution is correlated with the usage of benzamine drugs. The authors present eleven cases in which the clinical onset was preceded by prolonged or intensive administration of drugs containing the benzamine group. Statistics are presented to show that this class of drugs has wide usage among members of the medical and allied professions. A hypothesis for its production, based on oxidation reactions of the benzamine drugs, is

presented. In the clinical or experimental development of granulopenia, it is necessary to presuppose the existence of a previously weakened, damaged or idiosyncratic bone marrow which may be congenital or acquired. The authors urge that all who have the opportunity to study cases of granulopenia should direct their attention to a careful history of known marrow depressing agents and the usage of benzamine drugs in particular.

Cocaine Poisoning as Influenced by Diets.—Nedzel performed forty-eight experiments on thirty rabbits. Ten animals were kept on oatmeal and water; ten on carrots, and ten on oatmeal, water and carrots. The experiments consisted of injections of cocaine into the marginal ear vein of a rabbit. The dose of cocaine was 10 mg. per kilogram of weight. After injection, the animal was observed as long as symptoms were manifest. The results show that the animals on the alkali-forming diet and on the mixed diet reacted to the injection of cocaine more or less similarly; though the animals on the alkaline diet reacted more vigorously (two deaths). The animals on the acid-forming diet were definitely more sensitive to cocaine poisoning (four deaths). In general, the toxic effects of the cocaine were definitely greater and recovery was considerably delayed. It is possible that, in acute cocaine poisoning, the intravenous injection of alkali might be of benefit for the poisoned individual. Experiments on animals, to test this question, are called for.

Microdetermination of Cholesterol in Blood.—Kamlet tried to determine whether the extraction of the cholesterol may be effected at room temperature without the use of complicated extraction apparatus. Experiments showed that the cholesterol is quantitatively extracted by chloroform from blood dried on filter paper in two hours at room temperature. The following procedure was adopted for the determination of cholesterol in blood. On an ordinary 7 cm. filter paper, preferably ashless, 0.2 cc. of oxalated blood, serum or plasma is deposited. The paper is worked round until the liquid is distributed evenly over the surface and then it is suspended by means of a thread or wire strung through an unstained area in an incubator at from 35 to 40 C. After twenty to thirty minutes the blood is dried. The paper is rolled up compactly, folded into quarters and deposited in the bottom of an ordinary 6 by 1 inch test tube. Into the tube, 10 cc. of chloroform is pipetted, corked and set aside for at least two hours. During this period the chloroform should completely cover the folded filter paper. In this manner a quantitative extraction of cholesterol from dried blood, serum or plasma is effected without the use of heat, thus avoiding the occasional appearance of an off-color. Now 5 cc. of the chloroform solution is pipetted into an ordinary test tube. Into a similar tube 5 cc. of the working cholesterol standard is placed. The working cholesterol standard is made by diluting 5 cc. of the stock cholesterol standard (stock cholesterol standard: 1 Gm. of chemically pure cholesterol is dissolved in enough chloroform to make 100 cc. of solution) with enough chloroform to make 1,000 cc. of solution; 1 cc. contains 0.05 mg. of cholesterol. Both standards keep indefinitely in a refrigerator. To each tube 2 cc. of acetic anhydride and 0.2 cc. of concentrated sulphuric acid are added, stoppered, mixed by inversion, allowed to stand for fifteen minutes in a cool, dark place and compared in the colorimeter. Comparison: Reading of standard over reading of unknown multiplied by 250 equals milligrams of cholesterol per hundred cubic centimeters of blood. The unknown is set at 25 mm. and compared. The reading of the standard multiplied by 10 gives the milligrams of cholesterol in 100 cc. of whole blood, serum or plasma.

Journal of Nervous and Mental Disease, New York

79: 377-496 (April) 1934

Psychogenic Factors in Some Epilepsies. J. H. Masserman, Baltimore. —p. 377.
Scapular Tendon Reflexes. S. M. Weingrow, New York.—p. 391.
Frontal Lobe Lesions with Cerebellar Manifestations: Frontal Lobe as a Center of Equilibrium. A. Gordon, Philadelphia.—p. 411.
*Treatment of Some Multiple Scleroses by Electropyrexia. C. A. Neymann and S. L. Osborne, Chicago.—p. 423.

Treatment of Multiple Scleroses by Electropyrexia.—Neymann and Osborne treated twenty-five cases of multiple sclerosis by hyperpyrexia, produced by diathermy, radiothermy and the electric blanket, of which 44 per cent were much improved. An additional 40 per cent were improved to a lesser degree. During the time interval in which these patients were observed after treatment, all remained stationary. This interval varied from a few weeks to eighteen months. One patient returned to the hospital with an exacerbation of symptoms and two patients died, one as the result of treatment. The authors make no claims for the ultimate success of this therapy.

Journal of Nutrition, Philadelphia

7: 481-572 (May 10) 1934

A New Technic for the Measurement of Average Skin Temperature Over Surfaces of the Body and the Changes of Skin Temperature During Exercise. A. C. Burton, Rochester, N. Y.—p. 481.
The Application of the Theory of Heat Flow to the Study of Energy Metabolism. A. C. Burton, Rochester, N. Y.—p. 497.
Possible Sources of Calcium and Phosphorus in the Chinese Diet: I. Determination of Calcium and Phosphorus in a Typical Chinese Dish Containing Meat and Bone. P.-W. Hoh, Jessamine Chapman Williams and C. S. Pease, Corvallis, Ore.—p. 535.
Hyperthyroidism and Nutrition: I. Vitamin B and Thyroxine. B. Sure and Margaret Elizabeth Smith, Fayetteville, Ark.—p. 547.
Storage of Vitamin A in the Liver of the Rat. Augusta B. McCoord and Ethel M. Luce-Clausen, Rochester, N. Y.—p. 557.

Kansas Medical Society Journal, Topeka

35: 161-200 (May) 1934

Pathology of Hypertension. H. R. Wahl and W. C. Curphey, Kansas City.—p. 163.
Use of the Thomas Wrench in the Reduction of Fractures and Dislocations. J. B. Weaver, Kansas City, Mo.—p. 164.
Cerebral Fat Embolism. R. W. Kerr, Kansas City.—p. 167.
Reaction of Tumors to Irradiation. F. C. Helwig, Kansas City—p. 169.
Management of Empyema Thoracis. S. H. Snider, Kansas City, Mo. —p. 173.

Michigan State M. Society Journal, Grand Rapids

33: 235-274 (May) 1934

Some Functions of Cerebral Cortex: Beaumont Foundation Lecture II: The Frontal Lobes. J. F. Fulton, New Haven, Conn.—p. 235.
Michigan's Contribution to Early Roentgenology. W. A. Evans, Detroit. —p. 243.
Typhoid Fever in Detroit 1910-1933, Inclusive. F. M. Meader, Detroit. —p. 249.
Hypothyroidism and Cholelithiasis. C. B. Loranger, Detroit.—p. 255.

Minnesota Medicine, St. Paul

17: 237-300 (May) 1934

Cinchophen Poisoning. M. W. Comfort, Rochester.—p. 237.
Tumors of the Brain from the Surgical Standpoint. W. M. Craig, Rochester.—p. 241.
Development of the Human Chest: Similarity Between Normal Infantile and Adult Tuberculous Chests. S. A. Weisman, Minneapolis.—p. 244.
Injection Treatment of Hernia. C. O. Rice, Minneapolis.—p. 248.
Anesthesia for Rectal Surgery. H. F. Bayard, Minneapolis.—p. 252.
*Surgical Treatment of Hemorrhoids. W. A. Fansler, Minneapolis. —p. 254.

Surgical Treatment of Hemorrhoids.—Fansler describes a procedure, which he believes, with slight modification, can be applied to any case of uncomplicated hemorrhoids. The varicosed vessels and their interstitial tissue are removed and at the same time enough of their covering is removed so that no skin tabs or redundant mucosa will be left. Sufficient mucosa and skin is left to line the lower portion of the rectum and anal canal so that adequate dilatation may occur for defecation and to avoid a stricture. The operation is easily and thoroughly accomplished by leaving the hemorrhoids in their normal position and doing the operative procedure through an especially devised anoscope. In no case should the hemorrhoid be everted. The hemorrhoid to be treated is isolated in the slot of the anoscope. In this position it is freely visible and accessible, and the exact amount of tissue to be removed can be determined before the incision is made. A plain catgut suture is placed through the uppermost portion of the hemorrhoid. An incision is made from the lowermost part of the hemorrhoid mass to its extreme upper pole. A second incision is made laterally and parallel to the first and a V-shaped piece of tissue is removed. After the original section is removed, the edges of the mucosa are retracted with forceps, and the remaining vessels dissected out until the sphincter muscle and the circular muscular coat of the rectum are exposed freely. The cut edges are brought into apposition at a few points with plain catgut suture.

Missouri State Medical Assn. Journal, St. Louis

31: 177-224 (May) 1934

Significance of the Emotional Level: The Hodgen Lecture. W. B. Cannon, Boston.—p. 177.

*An Efficient Method of Heat Therapy in Treatment of Syphilis. C. C. Dennie, A. N. Lemoine and M. Polsky, Kansas City.—p. 184.

Roentgenologic Consideration of Silicosis. S. A. Levey, St. Louis.—p. 189.

Silicosis. H. B. Goodrich, Hannibal.—p. 193.

Hemolytic Jaundice Unimproved by Splenectomy with Ultimate Remission Following Liver Therapy: Report of Case. A. C. Van Ravenswaay, Boston, and A. Van Ravenswaay, Boonville.—p. 198.

Failure of Liver Therapy in Pernicious Anemia: Report of Case. F. S. Morest and A. H. Wells, Kansas City.—p. 201.

Heat Therapy in Treatment of Syphilis.—With the idea in mind that only a small proportion of syphilitic patients can be subjected to diathermy, malaria and heat cabinets, Dennie and his associates elevated temperatures by means of hot baths in an ordinary bath tub. The degree of temperature elevations that they obtained has been striking, and though the series of cases is not extensive they show a few markedly favorable clinical results and that temperatures so produced are fully comparable to those attained in heat cabinets, diathermias and electrotherms. The patient is immersed in a tub of water at from 95 to 105 F. and the temperature is gradually increased by the addition of hot water. There is a surprising individual variation, both in the degree of heat a given patient can tolerate and also in the length of time he can endure exposure to it. The individual tolerance is definitely built up from day to day. It is this tolerance which must govern the ultimate amount and intensity of heat that is administered. The goal is a bath water of from 105 to 115 F. for from ten to thirty minutes. The patient is watched closely as to his pulse and general appearance. At the first sign of distress, anxiety or collapse, the bath is discontinued. Following the bath there is a profuse diaphoresis during which the patient is warmly bundled up. Normal temperature is regained in from thirty to sixty minutes. The patient rests for several hours; fluids are forced, and rarely are any untoward effects seen. Usually there is a stimulation of the appetite and a euphoric reaction after several hours. Patients often gain weight under treatment. Baths are given daily if tolerance is satisfactory. The authors state that they used hot baths in a variety of types of advanced syphilis. Most of the cases have been of advanced tabes and tabes with dementia paralytica, but they have also included interstitial keratitides, gummas of the skin, late nodular syphilodermas, Charcot joints and a few visceral syphilids.

New England Journal of Medicine, Boston

210: 935-982 (May 3) 1934

Acute Thyroiditis: Report of Ten Cases. R. C. Cochrane and S. J. G. Nowak, Boston.—p. 935.

Carcinoma of the Small Intestine. H. K. Sowles, Boston.—p. 942.

Excision of the Thoracic Esophagus for Carcinoma, with Construction of an Extrathoracic Gullet. G. G. Turner, Newcastle-on-Tyne, England.—p. 947.

Cesarean Section: Review of Four Hundred and Thirty-Six Cases. C. T. O'Connor, Boston.—p. 948.

The Prevention of Crime: The Gangster in the Making. L. V. Briggs, Boston.—p. 953.

Atresia of the Cervix Associated with Hematometra. E. E. Allen, Tewksbury, Mass.—p. 959.

Ruptured Biceps Tendon: Repair. F. J. Cotton and G. M. Morrison, Boston.—p. 960.

New Jersey Medical Society Journal, Trenton

31: 187-248 (April) 1934

Gas Bacillus Infection. E. M. Finesilver, Newark.—p. 194.

Avertin Rectal Narcosis in Otolaryngology. V. E. Johnson, Atlantic City.—p. 200.

Preschool Medical Examinations in Hackensack. J. W. Demarest, Hackensack.—p. 203.

Cardiovascular Syphilis: Analysis of One Thousand Seven Hundred and Thirty Autopsies. S. Weintraub, New York.—p. 205.

Medicolegal Aspects of Malpractice. M. Kummel, Newark.—p. 206.

The Tuberculin Test. E. H. Kleinschmidt, New York.—p. 210.

A Successful Operative Procedure for Reshaping the Lower Limbs. G. Blackburne, Newark.—p. 214.

Roentgen Changes in Intestinal Obstruction. R. P. Sturr, Philadelphia.—p. 216.

Constipation: Clinical and Roentgenologic Studies of One Hundred Cases. S. W. Johnsen, Passaic.—p. 218.

Clinical Aspects of Appendicitis: Factors of Importance in Reducing Its Mortality. I. F. Frost, Morristown.—p. 221.

New Orleans Medical and Surgical Journal

86: 715-774 (May) 1934

Some Principles and Policies of the Medical Profession in Its Public Relations. C. A. Weiss, Baton Rouge, La.—p. 715.

Tribute to Departed Members. J. L. Scales, Shreveport, La.—p. 720.

Symptomatic Agranulocytic Angina Following Neurosphenamine Therapy. J. C. Culley, B. S. Guyton and J. R. Simms Jr., Oxford, Miss.—p. 721.

Hyperinsulinism: Report of Case. S. Jacobs, New Orleans.—p. 724.

*Cause of Primary Dysmenorrhea and Its Treatment by Hormone Therapy: Preliminary Report. J. T. Witherspoon, New Orleans.—p. 726.

Cervical Discharge, Sterility, Artificial Insemination. J. Cohen, New Orleans.—p. 730.

The Abdominal Trinity in Infants and Young Children. R. M. Stephenson, Lexington, Miss.—p. 731.

A Head Band. O. W. Bethea, New Orleans.—p. 735.

Treatment of Dysmenorrhea by Hormone Therapy.—Witherspoon believes that the most important cause of primary dysmenorrhea is the result of endocrine imbalance. The aim of treatment is either to counterbalance the excess of the follicular hormone by substituting additional corpus luteum influence or to withdraw this influence slowly, so that the follicular hormone stimulation of the uterus will not be precipitated but will appear gradually. The method of treatment employed was to give daily intramuscular injections, from three to four days previous to the expected menses and from one to two days during the menses, of 250 rat units (1 cc.) of follutein. After the period was passed, no treatment was given until just before the next expected period. Of ten patients so treated; the results were satisfactory in seven. In one, slight relief of pain was noted; in the other two patients the dysmenorrhea continued in its severe form. The only untoward symptoms noted were an occasional local reaction at the site of the injections. This could be alleviated by lessening the dosage given or by diluting the amount of injection with an equal volume of sterile physiologic solution of sodium chloride.

Philippine Journal of Science, Manila

53: 1-106 (Jan.) 1934

Leprosy in Cebu: II. J. Rodriguez and F. C. Plantilla, Cebu, Cebu.—p. 1.

Experiments on the Control of the Common Water Leech, Hirudinaria Manillensis. Z. de Jesus, Manila.—p. 47.

Plant Disease Problems Confronting Truck Farmers in Trinidad Valley and the Vicinity of Baguio, Mountain Providence, Philippine Islands. T. G. Fajardo, Manila.—p. 67.

Studies in Surra: I. Blood Chemistry in Equine Trypanosomiasis (Trypanosoma Evansi). R. Randall, Manilla.—p. 97.

Public Health Reports, Washington, D. C.

49: 555-580 (May 4) 1934

*Intravenous Use of Copper Sulphate Combined with Sodium Thiosulphate in Treatment of Trachoma. C. E. Rice, A. A. Drake and J. E. Smith.—p. 555.

49: 581-594 (May 11) 1934

Psittacosis Outbreak in a Department Store in Pittsburgh. L. F. Badger.—p. 583.

Copper Sulphate with Sodium Thiosulphate in Treatment of Trachoma.—Rice and his associates used a combination of copper sulphate with sodium thiosulphate intravenously in varying doses as a therapeutic measure in trachoma. In the smaller doses (from 20 to 80 mg., depending on body weight) no change was seen in the pathologic condition of the trachoma. There was symptomatic improvement, however, in some cases. In the larger doses (from 180 to 205 mg.) there seemed to be some slight effect on the trachoma as well as on the symptoms. In the larger doses advocated by Stastnik, there was an undesirable reduction in red blood cells and hemoglobin. It would seem desirable for any one experimenting further with this method of therapy to use caution in giving more than 1.25 mg. of copper sulphate per kilogram of body weight in combination with sodium thiosulphate, and to keep a close check on the hemoglobin. The authors did not secure the striking beneficial results described by Stastnik in any of their cases. This form of therapy did not cause any immediate untoward reactions after any of the intravenous injections, nor was there any undesirable effect on the kidneys that could be ascertained by frequent urinalysis. It seems that the possible dangers of this form of therapy outweigh any slight benefits obtained from it. Certainly it does not compare with the older established methods of therapy.

Puerto Rico J. Pub. Health & Trop. Med., San Juan

9: 217-364 (March) 1934

Relation of Type and Grade to Operability and Prognosis in Gastric Carcinoma. A. O. Whipple and T. S. Raiford, New York.—p. 217.
Studies on Schistosomiasis Mansoni in Puerto Rico: II. Epidemiology and Geographic Distribution of Schistosomiasis Mansoni in Puerto Rico: I. Epidemiology of the Infection on the Island. W. A. Hoffman and E. C. Faust, San Juan.—p. 228.
*Sedimentation Concentration Method in Schistosomiasis Mansoni. W. A. Hoffman, J. A. Pons and J. L. Janer, San Juan.—p. 283.
Filtrable Virus Diseases and the Nature of Their Causative Agents. E. B. McKinley, Washington, D. C.—p. 299.
Influence of Dietary Factors on the Resistance of the White Rat to Experimental Tuberculosis: I. Vitamin A Deficiency. P. Morales Otero, E. Koppisch and J. H. Axtmayer, San Juan.—p. 314.
Causes of Sudden Death in Puerto Rico: Analysis of Sixty-One Cases Studied Post Mortem. E. Koppisch, San Juan.—p. 328.

Schistosomiasis Mansoni.—The investigations of Hoffman and his associates indicate that the sedimentation concentration method is superior to the routine smear for the detection of eggs of Schistosoma mansoni in feces. It may be employed also as an adjunct to indicate the progress of therapy in schistosomiasis mansoni. It may aid in disclosing the presence of other intestinal parasites. Also some evidence has been advanced to suggest that all antimony compounds do not injure the ova of S. mansoni situated within the host.

Rhode Island Medical Journal, Providence

17: 71-88 (May) 1934

Treatment of Neurosyphilis: Summary and Evaluation of Methods Used During the Past Ten Years. W. N. Hughes, Providence.—p. 71.
Injuries to the Coccyx. H. McCusker, Providence.—p. 77.
Interesting Congenital Deformities. P. Appleton, Providence.—p. 82.

Southern Medical Journal, Birmingham, Ala.

27: 377-472 (May) 1934

Diseases of the Nails. V. Pardo-Castello, Havana, Cuba.—p. 377.
Benign Tumors of the Small Intestine. R. M. Moore and H. C. Schmeisser, Memphis, Tenn.—p. 386.
Abscess of the Liver Complicated by Duodenal Fistula. G. H. Bunch and O. B. Mayer, Columbia, S. C.—p. 393.
Fractures of the Os Calcis and Astragalus. W. Clarkson and A. Barker, Petersburg, Va.—p. 397.
End Results of Cesa Plana as Related to Treatment. G. A. Caldwell, Shreveport, La.—p. 402.
Relation of Gallbladder Disease Without Jaundice to Bradycardia and Heart Disease: Case Report. J. L. Carmichael, Birmingham, Ala.—p. 407.
Anginoid Symptoms of Gallbladder Disease: Survey of the Literature. W. E. Vest, Huntington, W. Va.—p. 410.
Clinical Value of the Study of the Peripheral Circulation. G. M. Pierrel, H. J. Tumen and S. Lisker, Philadelphia.—p. 413.
Nasal Sinus Disease in Children. L. W. Dean, St. Louis.—p. 418.
Sympathetic Ophthalmia: Report of Twenty-Eight Cases. L. T. Post, St. Louis.—p. 421.
Paralysis of the Diaphragm as a Therapeutic Agent. R. B. Bailey, Wheeling, W. Va.—p. 423.
Training Desirable in Future Practitioners of Medicine in the Promotion of Child Health. J. H. M. Knox Jr., Baltimore.—p. 430.
Autistic Thinking. W. R. Houston, Augusta, Ga.—p. 435.
Advisability of Repairing Old Lacerations of Cervix and Perineum at Time of Subsequent Delivery. J. R. Bloss, Huntington, W. Va.—p. 439.
Simple Method of Treatment of Prostatic Obstruction: Case Reports. J. B. Neil, Knoxville, Tenn.—p. 442.
Ovarian Pregnancy: Report of Case Probably Tubo-Ovarian, with Fully Grown Fetus. C. S. Neer, Vinita, Okla.—p. 445.
Malaria: Part I. Some Research Problems in Malaria. C. F. Craig, New Orleans.—p. 448.
Id.: Recent Work in the Epidemiology of Malaria. G. E. Riley, Jackson, Miss.; E. C. Faust, New Orleans, and T. H. D. Griffitts, Jacksonville, Fla.—p. 452.
Id.: Malaria Mortality in the Southern United States for the Year 1932. E. C. Faust and Celeste Goff Diboll, New Orleans.—p. 457.
Id.: Preliminary Observations on "Hibernation" of Anopheles Quadrimaculatus in Southern Louisiana. E. H. Hinman, New Orleans.—p. 461.
Id.: Malaria Surveys in Florida: Preliminary Report. T. H. D. Griffitts, Jacksonville, Fla.—p. 465.

Texas State Journal of Medicine, Fort Worth

29: 715-782 (April) 1934

Calculous Obstruction of the Common Bile Duct: Its Surgical Management. Q. B. Lee, Wichita Falls.—p. 720.
New and Improved Spinal Narcosis as Developed by German Physicians. J. F. Ford, Dallas.—p. 724.
Alkaline Encrusted Cystitis: Case Reports. R. E. Cone, Galveston.—p. 725.
Diseases of the Female Urethral Meatus. W. J. Graber Jr., Temple.—p. 728.
Pathologic Significance of the Nevus. C. Phillips, Temple.—p. 730.
High Blood Pressure and Hypothyroidism. Florence Widney Austin, Dallas.—p. 733.
Epileptic Syndrome and Treatment. P. M. Bassel, Temple.—p. 736.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

9: 65-132 (April) 1934

Vitamin A Deficiency in Children: Part I. Present Knowledge of the Clinical Effects of Vitamin A Deficiency, with Especial Reference to Children. Helen M. M. Mackay.—p. 65.
*Solar Irradiation of Children, with Especial Reference to Hypervitaminosis D. E. C. Dodds, J. D. Robertson and H. J. Roche.—p. 91.
*Pyelonephritis in Infancy and Childhood: Its Bacteriology and Pathology. Mary A. Griffin.—p. 105.
A Nutritional Disease of Childhood Associated with a Maize Diet and Pellagra. H. S. Stannus.—p. 115.
Pyelography in Infants. W. E. Underwood.—p. 119.
Unusual Case of Disseminated Sarcoma in a Child. E. Pritchard and D. H. Haler.—p. 125.

Solar Irradiation of Children.—Dodds and his associates exposed twenty-eight children suffering from various orthopedic conditions to solar radiation during the summer months. No clinical ill effects occurred. In no case can it be said that the progress of the patient was retarded as a result of the insolation. The marked improvement in the general condition that followed admission might be attributed partly to a beneficial effect resulting from exposure to the sun. Although the amount of insolation obtained was not the maximum possible, it was sufficient to demonstrate that there is little or no likelihood of producing ill effects due to excessive liberation of vitamin D produced by irradiation of the ergosterol contained in the skin. The increase in the serum calcium and phosphorus which was found to have occurred was within physiologic limits. No signs of toxicity such as have been reported by investigators of hypervitaminosis D have been demonstrated. Taking the combined calcium-phosphorus metabolism into consideration, it appears that on a normal diet doses of vitamin D such as are produced by irradiation cause a greater increase in the blood phosphorus than in serum calcium.

Pyelonephritis in Infancy and Childhood.—Griffin performed necropsies in 170 cases of pyuria in infants and children, examining the kidneys histologically in seventy and recording the bacteriologic results in eighty-seven. In twenty-five the formation of agglutinins was studied and in nine complement fixation tests were carried out. Coliform bacilli were the organisms most commonly isolated, suggesting that pyuria is due to auto-infection from the intestine. Great specificity to agglutination was shown by the coliform organisms. For this reason only autogenous vaccines are likely to be of benefit. Agglutination of the organisms isolated from the urine with the patient's serum occurred much more commonly in the fatal cases than when the patient recovered. Acutely ill patients whose serum did not agglutinate recovered quickly. Probably the development of agglutinins depends on the extent and severity of the lesions in the kidneys and on the general resistance of the patient. The power of fixing complement did not run strictly parallel to the agglutinating properties of the serum. The morbid anatomic and histologic observations indicate that the lesion is a suppurative nephritis affecting especially the renal cortex and that these lesions may either heal leaving scar tissue or become subacute and show scattered foci of round-cell infiltration. The cortical distribution of the lesions and the relatively infrequent infection of the pelvis and bladder point to a blood infection in most cases.

British Medical Journal, London

1: 653-698 (April 14) 1934

Radium Teletherapy: Latest Modification of the Westminster Apparatus and Its Use. H. T. Flint, L. G. Grimmet, E. R. Carling and S. Cade.—p. 653.
Two Hundred and Seventy Cases of Fractured Spine Radiologically Considered. O. L. Rhys.—p. 655.
Full Term Ectopic Gestation. E. B. Low and H. J. McCurrich.—p. 657.
*Untoward Effect of Phenylhydrazine Hydrochloride in Polycythemia. A. M. Kennedy.—p. 659.
Some Theoretical Aspects of Collapse Therapy. F. H. Young.—p. 661.
*Hemochromatosis: Case. S. W. Smith and H. Blair.—p. 663.

Phenylhydrazine Hydrochloride in Polycythemia.—Kennedy points out that phenylhydrazine hydrochloride has been employed with considerable success in many cases. It has a hemolytic effect and reduces the volume of the blood. It

has been suspected of producing serious toxic damage to the liver and kidneys, but conclusive proof of this change is lacking. Clinical experience has shown that administration is not always devoid of risk for certain types of patients, for example, those more than 60 years of age, with marked arteriosclerosis or advanced disease of the liver, kidneys or other viscera. Its use in such patients should be avoided or attended with special caution and the effect of a dose of 1½ or 3 grains (0.1 or 0.2 Gm.) should be watched for several days before more is prescribed. The author reports a case in which four short courses of treatment with phenylhydrazine hydrochloride were given without any untoward effect but a fifth produced a severe hemolytic crisis.

Hemochromatosis.—Smith and Blair report a case of bronzed diabetes in which sugar (a trace) was demonstrated in only one specimen of urine. The patient was a girl aged 20 years, with skin pigmentation of considerable depth and of a definite bronze hue, especially on exposed parts. On two occasions she had become so severely jaundiced that the conjunctiva was discolored and cirrhosis of the liver was suspected. At no time was the liver palpable; it had become shrunken and small. During life, a provisional diagnosis of hemochromatosis was made; this diagnosis was verified by the postmortem examination. The cause and the pathogenesis of the rare condition of atrophodermia of the face that was seen in this case are easily explained. The subcutaneous tissues and skeleton grew so rapidly that the skin could not accommodate itself to the increased bulk and became overstretched, as it did at the same time about the hips and thighs. The lesions of the face occurred in the course of about two weeks. They were pinkish at first and paled after some weeks.

Edinburgh Medical Journal

41: 245-292 (April) 1934

Preparation of Catgut for Surgical Use. E. R. Porteous.—p. 245.
The Mental Element in Crime and Criminals. R. A. Fleming.—p. 261.

Glasgow Medical Journal

3: 125-172 (April) 1934

Pulmonary Tuberculosis and Pregnancy, with Especial Reference to Effect of Compression. J. Crocket.—p. 125.
Oxygen and Carbon Dioxide Therapy: Some Physiologic Considerations. E. G. Oastler.—p. 139.

Lancet, London

1: 773-824 (April 14) 1934

The Medical Curriculum and Medical Education. C. A. Pannett.—p. 773.
*Blood Brain Barrier in Infectious Diseases: Its Permeability to Toxins in Relation to Their Electrical Charges. U. Friedemann and A. Elkeles.—p. 775.
Aneurysm of the Innominate Artery: A Twenty-Three Years' History. C. Miller, R. Dolbey and C. Ballance.—p. 778.
Preparation and Properties of an Antithyrotropic Substance. Evelyn M. Anderson and J. B. Collip.—p. 784.
Artificial Respiration for Two Years. Phyllis M. Tookey Kerridge. —p. 786.
*Pseudo-Ephedrine in Asthma. G. W. Bray and L. J. Witts.—p. 788.
Effects of Tonsillectomy on Antitoxic Immunity to Diphtheria in a Rural Population. W. A. Buice.—p. 790.

Blood Brain Barrier in Infectious Diseases.—Friedemann and Elkeles state that the blood brain barrier is localized in the walls of the cerebral capillaries. Its permeability coincides with that of the cerebral capillaries. They discuss the methods for testing the permeability of the blood brain barrier. In their experiments with toxins they used four methods: (1) artificial perfusion of the brain, (2) auxoneurotropic effect, (3) comparative determination of the lethal dose of the toxin by the intravenous and the intrathecal route and (4) identification of the toxin in the brain after intravenous injection. As a result of a critical reexamination of the literature and of their experiments, they have arrived at the conclusion that the blood brain barrier is permeable to cobra venom and lamb dysentery toxin, and impermeable to diphtheria, botulinus and tetanus toxins. The property of the toxins of vibrion Nasik and vibrion El-Tor are not sufficiently known. Of the toxins investigated, the ability to pass the blood brain barrier is correlated to electrical charge. Diphtheria, tetanus and botulinus toxins that do not pass the blood brain barrier carry a negative charge at the p_H of the blood. Of the two toxins that pass the blood brain barrier, lamb dysentery toxin is neutral and cobra toxin carries a positive charge at the p_H of the blood. The experiments suggested that the electrical charge of toxins has a bearing on the problem of the incubation period. The two toxins that are either neutral or carry a positive charge have no incubation period. The importance of these results for the pathogenesis of infectious diseases is discussed in the case of diphtheria.

Pseudo-Ephedrine in Asthma.—Bray and Witts assessed the relative value of ephedrine and pseudo-ephedrine by the diminution in the number of attacks produced by the continuous administration of the drugs and by the relief of the actual paroxysm by the administration of the drug at the onset of the attacks. Twenty children, twelve boys and eight girls, aged from 4 to 9 years, were chosen who had had their asthma for at least two years, had attacks more or less all the year round and had not previously had hospital treatment. These children were divided into four groups of five children and observed during alternate control periods, periods while taking ephedrine regularly and periods while taking pseudo-ephedrine regularly. The dosage employed one-fourth grain (0.016 Gm.) morning and evening for a child less than 7 years of age and one-half grain (0.03 Gm.) morning and evening for a child more than 7 years of age. The mothers were instructed to give an additional tablet whenever an attack threatened. During the control period all the children had two teaspoonfuls of water just colored with burnt sugar three times a day. No other treatment, antiasthmatic or otherwise, was given. The twenty children during a control period of twelve months had forty-nine attacks; in eighteen months on ephedrine they had seventy-eight attacks and in eighteen months on pseudo-ephedrine they had fifty-two attacks. The attacks were most severe in the control periods, less severe while taking ephedrine, and least severe while taking pseudo-ephedrine in almost all cases. It was found that in relieving paroxysms ephedrine gives relief in about 85 per cent of adult asthmatic patients and unpleasant reactions in 50 per cent and that pseudo-ephedrine gives relief in about 60 per cent of adult asthmatic patients and unpleasant reactions in 20 per cent. The therapeutic efficiency of these drugs is rather closely correlated with their toxicity, but in a few patients pseudo-ephedrine will relieve the asthmatic paroxysms when ephedrine has had to be abandoned on account of its unpleasant side actions.

1: 825-878 (April 21) 1934

Industrialized Man and His Background. L. P. Lockhart.—p. 825.
The Adrenogenital Syndrome. L. R. Broster.—p. 830.
*Lysis of Fibrin by Streptococci: Its Application to the Problems of Rheumatic Infection in Children. G. Hadfield, V. Magee and C. B. Perry.—p. 834.
Treatment of Profuse Bleeding from the Stomach and Duodenum. R. S. Aitken.—p. 839.
Carcinoma of the Rectum. D. C. L. Fitzwilliams.—p. 842.
*Thrombopenic Hemorrhagic Purpura Due to Idiosyncrasy Toward the Hypnotic Sedormid: Allergotoxic Effect. F. E. Loewy.—p. 845.
Paper Films in Radiography. J. V. Sparks.—p. 847.

Lysis of Fibrin by Streptococci.—Hadfield and his associates tested the susceptibility to fibrinolysis of 130 samples of human plasma and the fibrinolytic power of thirty strains of streptococci showing β-hemolysis on blood plates, and have confirmed the conclusion of Tillett and Garner, and Tillett, Thomas and Garner that hemolytic streptococci vary in their power to liquefy a normal plasma clot. They fall into three groups with a fair degree of accuracy: In the first, fibrinolysis is rapid and complete; in the second the clot is completely digested in approximately double the time taken by cultures in the first group; in the third, lysis is slow and is incomplete at the end of twenty-four hours. Eleven of the thirty strains of hemolytic streptococci were found to liquefy human fibrin rapidly. The majority of these lytic strains were isolated from cases of severe human infection and, with one exception, their colonies on solid mediums were "rough" and virulent to mice. Weakly fibrinolytic strains showed glossy colonies and were less virulent. The liquefaction of human plasma clot by hemolytic streptococci is not related to the fibrin content. Total resistance to fibrinolysis appears to be a specific immunity response to infection by hemolytic streptococci. The plasma clot of children suffering from acute and subacute rheumatism was frequently found to show total resistance to fibrinolysis.

Thrombopenic Hemorrhagic Purpura.—Loewy presents a case of Werlhof's disease and two milder cases of thrombopenic

purpura that were due to prolonged administration of the new hypnotic sedormid (allylisopropyl-acetyl-urea) to hypersensitive patients. In the first case, after recovery, thrombopenic purpura was produced at will by giving from a half to one 4 grain (0.25 Gm.) tablet of the drug. The elucidation of these cases was by no means simple, as the drug had been considered harmless and the patients had taken the drug repeatedly for some time without apparent ill results. Severe loss of blood platelets and consequent hemorrhagic diathesis have been caused by the usual doses of the drug. Repeated administration of a drug may lead to an illness due to sensitization, or show an allergotoxic effect. This condition is unlike the typical purely allergic disorders and distinctive according to the chemical nature of the drug. The modern hypnotics and sedatives are valuable but are never entirely harmless. Careful supervision is required, especially with drugs of recent introduction and with hypersensitive patients whose digestive tracts are irritable. Cases of essential thrombopenic purpura may be traced to drugs that have been taken for some time with no evidence of ill effects (arsphenamine, sedormid). If the patient receives a blood transfusion, time will be gained for closer investigation and an operation may be avoided.

Medical Journal of Australia, Sydney

1: 455-484 (April 7) 1934

Studies in the Composition of the Gastric Juice: Part II. G. V. Rudd.—p. 455.
*Observations on Hemochromatosis. K. Maddox and E. Beatrix Durie.—p. 463.

Observations on Hemochromatosis.—Maddox and Durie describe four cases of hemochromatosis. Since cirrhosis and pigmentation of the liver are the only features common to all cases, they are of the opinion that hemochromatosis is merely a syndrome of liver cirrhosis in general and not a separate disease entity. It represents an advanced stage of "pigment cirrhosis." The disturbance of carbohydrate metabolism is partly pancreatic but mainly hepatic, wherein the extent of iron deposition is a fairly accurate index of the degree of interference with glycogenolysis and glycogenesis, possibly owing to deficient formation of insulin kinase. In the few patients benefited by insulin, damage or dysfunction of the pancreatic islets is assumed to be present. Prolonged epigastric pain is an evil prognostic sign. The authors believe that further work in this field can be applied best in the direction of ascertaining the character of the iron and copper balance over an adequate period and by close biochemical investigation of the terminal coma of the disease, which clinically has points of difference from both true diabetic coma and cholemia, together with further research on the glycogen and pigment metabolism in other types of liver cirrhosis.

Quarterly Journal of Medicine, Oxford

3: 137-292 (April) 1934

*Increased Carbohydrate Tolerance in Diabetics Following the Hourly Administration of Glucose and Insulin Over Long Periods. A. Ellis.—p. 137.
*Contribution to the Study of Erythroblastosis: Icterus Gravis Neonatorum. J. C. Hawksley and R. Lightwood.—p. 155.
Pellagra in Great Britain. H. S. Stannus and C. R. Gibson.—p. 211.
Observations on the Speed of the Circulation. C. W. C. Bain.—p. 237.
*Peripheral Circulation in Acute Lobar Pneumonia. C. B. Perry.—p. 273.

Carbohydrate Tolerance in Diabetes Following Administration of Dextrose and Insulin.—Ellis used dextrose and insulin hourly without other food over periods of days in the treatment of a number of cases of advanced diabetes. Given in this way, large amounts of dextrose, 600 Gm. daily, are well tolerated in advanced diabetes, the requirement of insulin being no greater than that necessary on an ordinary restricted diabetic diet. During and following such administrations of dextrose marked temporary improvement in carbohydrate tolerance, with great reduction in the amount of insulin required, sometimes occurs. In the most marked instance the reduction of insulin was from 192 units daily before the administration of dextrose to 9 units daily on the twenty-first day after administration of dextrose, the diet being unchanged. The explanation of this improvement is not known. The possible bearing of these observations on the theories of the pathogenesis of diabetes is discussed.

Icterus Gravis Neonatorum.—According to Hawksley and Lightwood, icterus gravis neonatorum can no longer be regarded as an isolated disease. Evidence has accumulated that brings it into relation with fetal dropsy and hemolytic anemia of the new-born. The diagnosis cannot be reserved for the familial cases, which form only a proportion of the total. Its conception as a disease of the liver must be widened. The blood changes consist in a rapidly developing anemia, almost unanimously agreed to be hemolytic. There is a brisk response by the hematopoietic tissues, which are intensely stimulated, and, with the outpouring of nucleated red cells, an embryonic blood picture occurs. The pathologic observations consist in persistence of extramedullary hematopoiesis, and the cell pattern of the bone marrow shows immaturity and signs of regenerative activity. Cell degenerations and necroses occur in both the liver and the brain in certain cases. Among the known sequelae in nonfatal cases are anemia and nervous manifestations. Evidence is given suggesting that some cases of idiopathic juvenile cirrhosis and splenic anemia may take their origin in icterus gravis and that the etiologic background of hepatolenticular degeneration may be related to kernicterus. The authors discuss the treatment of icterus gravis and emphasize the value of repeated blood transfusions. The cause of fetal erythroblastosis, including icterus gravis, remains unknown, but they conclude that the evidence suggests that it is a primary hemolytic process rather than a primary disturbance of blood formation. There is insufficient evidence definitely to incriminate a toxin (or toxins), though this explanation is suggested by certain of the facts. The possibility of a hereditary factor in the production of the disease has never been adequately investigated.

Peripheral Circulation in Lobar Pneumonia.—Perry studied the reactions of the small vessels of the skin in twenty-six cases of lobar pneumonia. An impaired efficiency in the contractility of the capillaries at the height of the disease was demonstrated. The recovery of the capillaries is slow and not immediately affected by the crisis. Part, at least, of the circulatory failure encountered in lobar pneumonia is due to the impaired efficiency of the small blood vessels. The blood pressure is raised rather than lowered during the acute phase of the disease. Experimental and clinical observations suggest that in the majority of cases of lobar pneumonia both the vasomotor center and the myocardium suffer little damage and yet the patient dies of circulatory failure. The author's studies support the suggestion of Ritchie that the circulatory failure in lobar pneumonia is really a failure of the circulation at the periphery. If this theory is accepted, it has obvious bearings on the treatment to be adopted, since efforts to stimulate and improve the tone of the minute blood vessels are more likely to benefit the patient than attempts to increase the efficiency of the heart itself. The slow recovery of normal efficiency in contractility of the capillaries observed in this study indicates the need for prolonged and careful convalescence in lobar pneumonia.

South African Medical Journal, Cape Town

8: 237-276 (April 14) 1934

Twenty-Five Years of General Practice. J. N. W. Loubser.—p. 239.
Eczematoid Ringworm of the Extremities. F. Krone.—p. 244.
*Cerebral Hemorrhage with Recurrent Transient Hemiplegia and Jacksonian Fits: Case. O. K. Williamson and F. W. Simson.—p. 249.
How to Conduct a Baby Show. A. M. Geddes.—p. 251.

Cerebral Hemorrhage, Transient Hemiplegia and Jacksonian Fits.—Williamson and Simson report a case of cerebral hemorrhage in which a temporary right hemiplegia occurred, and later on jacksonian fits, with a temporary right hemiparesis, evidently resulting from a lesion in the same region of the brain. The condition of right hemiplegia, the signs of which disappeared completely, seemed to be most reasonably explained by a spasm of the muscular coat of the arterial branches supplying the part of the brain involved, and the jacksonian fits were accounted for by the same hypothesis: the patient was accordingly treated with increasing doses of erythrol tetranitrate in tablet form. The pyramidal motor fibers passing from the precentral area in front of the fissure of Rolando were uninvolved by the former hemorrhage except in regard to a few of those concerned in the voluntary movements of the arm. The most obvious explanation of the

hemiplegia would appear to be that this was due partly to edema round the effused blood involving the motor fibers, and partly to the pressure of the effused blood itself, the paralysis thus being caused. The extent of the paralytic and other signs in the early stage of a cerebral hemorrhage is greater than that which is noticeable later on when the edema has passed away. Of special interest is the fact that the actual hemorrhage practically left uninvolved the motor fibers, so that all the paralytic signs were due to the associated edema and pressure of the effused blood and that these signs completely disappeared coincidentally with the absorption of the edematous fluid. Such a clinical picture with corresponding postmortem observations must be uncommon. The jacksonian fits, which started in the area of the right thumb, are explained by the involvement of some of the arm fibers by the hemorrhage. An alternative explanation is that there had been a condition of spasm affecting the arterial branches supplying the area, which was the seat of the old hemorrhage and which also extended to the part corresponding to the transient recurrent paralysis; that later on rupture corresponding to the old hemorrhage took place in some of the vessels, but that the spasm passed off in those vessels supplying the localized area whose temporary loss of function caused the paralysis. It should be borne in mind that the conditions which are believed to favor spasm of cerebral arteries are precisely those which render likely the occurrence of intracranial hemorrhage. Jacksonian fits are rare phenomena as a result of cerebral hemorrhage, though they may occur in any organic lesion of the brain or its membranes or, indeed, in uremia or dementia paralytica. The fact that there was a nutmeg liver suggests that the edema may have been partly cardiac in origin.

Journal of Oriental Medicine, South Manchuria

20: 25-32 (Feb.) 1934

Cholera and Cholera-Like Vibrio: Part II. Water-Vibrio Isolated During the Summer of 1932 in Mukden. K. Manabe.—p. 25.
Id.: Part III. Kind of Strain in Dejecta of Patients Suffering from Acute Gastro-Enteric Disorder Agglutinated by Cholera Serum. K. Manabe.—p. 26.
Food of Japanese Farmers in Manchuria: Experiment on Digestion and Absorption of Mixed Principal Foods from Among the Products of Manchuria: II. A. Abe, U. Takei, O. Ueno, M. Ebihara and A. Yokota.—p. 27.
*Nerve-Center Poisoning by Morphine: Part I. Experiments on Rabbits. A. Hayashi.—p. 28.
Insertion of the Gluteus Maximus on the Femur in the Chinese. M. Haschimoto.—p. 30.
Acute Benign Aseptic Meningitis. T. Akasawa.—p. 31.
Supernumerary Nipples in the Chinese. S. Takeya.—p. 32.

Nerve-Center Poisoning by Morphine.—Hayashi produced either acute or chronic poisoning with morphine in thirteen adult rabbits. He observed the pathologic and histologic changes in their nerve-center system. In cases of acute morphinism there was no marked change in the pia mater of the brain and the spinal cord. In cases of chronic morphinism the cerebral pia mater of some of the rabbits became slightly thicker. Acute morphinism caused no marked change in the cells of the walls of blood vessels. Chronic morphinism caused the walls of blood vessels to become slightly thicker and some of the cells in the walls to shrivel and cohere to some slight degree. In both the acute and the chronic type of morphinism, hyperemia and hemorrhage were produced. The change in nerve cells poisoned by morphine is retrograde. In cases of acute morphinism, Nissl's acute cell disease occurs. Chronic morphinism causes serious and chronic cell disease. The lipoid content of the nerve cell increases and neurofibrils are altered. The neuroglia is not changed to a marked degree by acute morphinism. In chronic morphinism, both progressive and retrograde changes are noted, with a small increase in the fibroglia. In acute morphinism, the medullary sheath is not changed as a rule. Chronic morphinism causes damage of the medullary sheaths of the telencephalic pallium, spinal cord and spinal root nerves. According to tests made by Marchi's method, granulation is increased slightly. The quantity of lipoid is increased as a rule in cases of chronic morphinism and is not altered in cases of acute morphinism. An increase of lipoid was observed in the walls of blood vessels, nerve cells and cells of neuroglia. The increase was especially marked in the conical cells of the horn of Ammon, the telencephalic pallium and the globus pallidum.

Archives de Médecine des Enfants, Paris

37: 193-256 (April) 1934

Dolichocolon and Megacolon in Child. P. Nobécourt and R. Richard.—p. 193.
*Clinical Diagnosis of Tracheobronchial Adenopathies: Some Hitherto Unpublished Symptoms. K. Rachid.—p. 213.
Acute Leukemia with Grave Ulceronecrotic Angina in Child. C. Kizoulis.—p. 217.

Clinical Diagnosis of Tracheobronchial Adenopathies.—Rachid states that tracheobronchial adenopathies in the course of their development are more easily detected by clinical than by roentgen examination. He maintains that percussion of the anterior aspect of the thorax, especially of the sternoclavicular angles on both sides, is more advantageous than that of the posterior aspect, at which the interscapular region is the site of predilection. The anterior and superior aspects of the thorax in infants possess an almost uniform thickness as far as the axillary line, while posteriorly the uniform thickness of the wall exists only in a small area between the border of the scapula and the prevertebral muscles. Thus, in a child lying supine with arms extended, percussion may reveal an equal resonance in the first intercostal spaces from one axillary line to the other (negative adenopathy) or a diminished resonance close to the axillary line (glandular mass by itself or associated with the apexes). This sign points to the existence of relative hypertrophied nodes of the anterior wall. Adenopathy of the thoracic cavity consists of newly formed masses; these tumefactions are found during the stage of phlegmasia. The symptom of respiratory silence is produced by compression of a large bronchus. This arises from the flattening of the bronchus, as a result of the flexibility of the cartilage in the child, by a nearby glandular mass, or is due to a tumor within the bronchus cutting off the air. The symptom often consists of absence of respiratory sounds of the left anterior, posterior or lateral pulmonary lobe in which percussion does not denote any local dulness. When the mass is in the inflammatory stage, auscultation reveals a pleural rub and suppressed breathing. These signs are localized over a large area: the right or left subclavicular space anteriorly, the first and second intercostal and interscapular spaces close to the median line posteriorly. Auscultation is best performed after a slight cough. The development of these signs takes place during the inflammatory stage and disappears after its regression. The author explains the mechanism of the pleural and pulmonary exudation as a vasodilatation and passive hyperemia produced in these tissues by hyperplastic adenitis the vascularization of which is intensified by inflammation.

Presse Médicale, Paris

42: 617-640 (April 18) 1934

Metabolism of Vitamin A. R. Debré and A. Busson.—p. 617.
*Virulence of Koch's Bacillus in Disappearing Exudates. Y. Nedelkovitch.—p. 619.
Traumatic Sacrolisthesis and Spondylolisthesis. A. Lippens.—p. 622.
Evolution of Ideas on Medical Hydrobalneology: Transcutaneous Resorption of Thermal Gases; Positive Results of Experimentation. A. Mougeot and V. Aubertot.—p. 624.
Duodenal Anomalies. M. Breton.—p. 627.

Virulence of Tubercle Bacillus.—To answer the question whether in the spontaneously disappearing tuberculous exudates the fluid becomes bactericidal outside the organism, Nedelkovitch made exploratory punctures on eleven patients. Each specimen was left for a longer or shorter period either at the laboratory temperature or that of the incubator. The material was injected into guinea-pigs. In all instances positive evidence of live and virulent tubercle bacilli was obtained. He concludes that tubercle bacilli are not dead in disappearing exudates and that convalescence and cure result in spite of the presence of living virulent organisms. Recovery depends, therefore, not on the presence of bacilli in the exudate but on the relation between the bacilli and the cells (and probably other elements) in the pleural lesions themselves. In the purulent pleurisies of pneumothorax which disappear spontaneously and in which the recovery lasts a long time, the specimens taken toward the end lose their virulence much more rapidly than those obtained at the early appearance of the exudate. Furthermore, it was apparent that the bacilli in the exudates were just as resistant to the bactericidal properties of the exudate outside the body as inside. These bacilli, however, become sensitive to this bactericidal

action of the exudate after passage through culture mediums. When recovery begins, the organism becomes insensible to the poisonous effect of the bacteria; but the bacilli also are resistant to the bactericidal action of the tissues. In making repairs the organism clears out the bacilli in the same way as it does cellular débris or foreign bodies. Thus the enormous number of bacilli disappear, although some may persist and can produce new lesions in case of returned lowered resistance on the part of the host.

Schweizerische medizinische Wochenschrift, Basel

64: 409-456 (May 12) 1934. Partial Index

Clinical Aspects and Therapy of Cholesteatoma of Middle Ear. L. Rüedi.—p. 411.
*Death from Drowning and Its Connection with the Ear. A. Werner. —p. 418.
*Rôle of Ear in Etiology of Sudden Death from Drowning. J. Schmid. —p. 429.
Osteitis Deformans (Paget) of Skull with Auditory Disturbances. M. Weibel.—p. 430.
Baryecoia in Twins. H. Mauerhofer.—p. 433.
Detection of Unilateral Deafness. H. Bucher.—p. 436.
*Paralysis of Hypoglossal Nerve in Sore Throat. K. Ulrich.—p. 444.
Treatment of Cancers of Larynx. R. Guyot.—p. 448.
*Treatment of Permanent Stenoses of Larynx by Means of Individually Fitted Retention Tube. P. von Gunten.—p. 450.

Death from Drowning.—Werner shows that the drowning of the person who does not swim differs from the drowning of swimmers, the latter occurrence being designated as sinking. Whereas in the persons who do not swim death is caused by suffocation because of the inability to keep above water and to breathe, the cause of the sinking of swimmers lies in the body itself. The sinking of a swimmer generally takes place without a struggle as the result of partial or total loss of consciousness. The author states that laymen generally ascribe the sinking of a swimmer to loss of movement, to "spasm," but he points out that there are several other possibilities. Ulrich advanced the theory that the main cause of the sinking of swimmers is digestion hyperemia, and the author decided to investigate this theory in postmortem examinations on fifty drowned persons, of whom twenty-seven had died while swimming. In about 70 per cent of these, digestion hyperemia, occasionally combined with other factors, was the cause of death; 10 per cent had severe cardiac and vascular disturbances, and it may be assumed that they sank because of sudden death in the water, and 20 per cent had no digestive hyperemia but had mild cardiovascular disturbances or other anomalies. In the latter group, various causes may have caused death. In thirty-two cases the petrous bones were examined in order to determine whether the sinking was the result of otogenous factors. The author believes that otogenous drowning is comparatively rare. He thinks that the possibility of this mode of death can be conceded in only one of the thirty-two cases examined for this cause. Approximately 90 per cent of the swimmers who died sinking had slight or no hemorrhages in the middle ear. Such changes were most frequent in the nonswimmers who drowned. The author gives the following warnings to bathing or swimming persons: 1. It is dangerous to bathe or swim while the stomach is filled, for digestion hyperemia is one of the main causes of death. 2. Weak and hypersensitive persons, and particularly those with heart disease, must be especially cautious. 3. Patients with disease of the middle ear should be aware of the fact that the entrance of cold water into the ear irritates the labyrinth, causes vertigo and may lead to drowning.

The Ear and Death from Drowning.—Schmid states that the managements of swimming pools warn persons with defective tympanic membranes against diving. The author relates the histories of three persons in whom a rupture of the tympanic membrane occurred while diving. In discussing these cases he shows that not only perforated tympanic membranes deserve attention but abnormally thin membranes and those with atrophic scars likewise present a grave danger. For this reason the examining otologist should search for perforations and should examine the mobility of even apparently normal tympanic membranes by means of Siegle's speculum. Moreover, even in the case of an apparently normal tympanic membrane the diver should be advised to protect the ears against the force of the water.

Paralysis of Hypoglossal Nerve in Sore Throat.—Ulrich reviews twelve cases in which unilateral paralysis of the tongue developed in acute pharyngeal disturbances. The causal disorder was generally a severe sore throat with abscess formation or extensive swelling of the cervical glands. The hypoglossal paralysis was always unilateral and developed on the more severely affected side. The direct overlapping of an inflammatory process on the nerve seems to be the main factor in the development of the hypoglossal paralysis. The author also describes four cases of his own observation. In two instances microscopic examination revealed that the lesion of the hypoglossal nerve was due to periphlebitis of the jugular vein and of the posterior facial vein, respectively. The surgical observations in the third case and the clinical course of the fourth indicate the same mode of impairment.

Treatment of Laryngeal Stenoses.—The therapeutic method suggested by von Gunten for the treatment of laryngeal stenoses employs an individually fitted retention tube. It avoids the obstacles developing as a result of the irritation of the mucosa and also exerts a mild and uniform pressure on the stenosis. In order to fit the tube correctly, an imprint is made of the larynx by means of gutta-percha. A cast is made of this imprint and then a silver tube is formed. Illustrations of the tube in various positions show that the external orifice can be closed by a valve. One of the two patients for whom the author employed this method had undergone a high, the other a low, tracheotomy in the treatment of diphtheria. The tube caused no irritation, it excluded the danger of asphyxia and in a comparatively short time respiration was possible again by the natural channel. The removal of the tube proved impossible because the stenosis persisted, but the patients were not annoyed by it and were able to lead a normal life. The author does not intend to discontinue this treatment. He thinks that, if the action of the tube has widened the stenosis sufficiently, it will be possible to withdraw the tube and to close the tracheostomy.

Rassegna Internazionale di Clinica e Terapia, Naples

15: 383-444 (April 15) 1934

*New Treatment of Cerebral Hemorrhage and Its Effects. R. Colella and G. Pizzillo.—p. 386.
Glycemia in Heat Stroke Under Influence of Ergotamine. C. Ventura. —p. 394.
Sea Bathing in Northern Climates and Its Effect on Organism. I. B. Schulutko.—p. 398.
Thrombo-Angiitis Obliterans. S. Silbert.—p. 405.

Treatment of Cerebral Hemorrhage.—Colella and Pizzillo studied cases presenting encephalic traumas, hemorrhages and cerebral embolisms at different pathologic stages. They found that the effects of cerebral hemorrhage may be corrected to a marked degree and sometimes totally by intramuscular injections of the blood of the patient. This autohemotherapy consists in taking from 25 to 30 cc. of blood from a vein of the arm or of the foot and reinjecting it immediately into the gluteal region of the healthy side. Before puncturing the vein, it is advisable to pour several cubic centimeters of a 25 per cent solution of sodium citrate into the syringe in order to prevent premature coagulation of the blood. These injections are hemostatic and are an aid to the treatment of cerebral hemorrhage and its effects in all cases, irrespective of the origin or nature of the hemorrhage, the age of the patient and the time of attack. Cures have been observed in the most acute cases and in severe traumatisms to the head in which the symptoms are due to a genuine cerebral hemorrhage. The results are better and more rapid than those of surgical intervention. Autohemotherapy is beneficial in the treatment of cerebral hemorrhage before, during and after a stroke. It may be administered as a prophylactic in cases of arterial hypertension with hereditary predisposing conditions: vertigo, weakness of the limbs and tremors of the extremities are frequent premonitory signs of stroke in arteriosclerotic patients, and their results are avoided or immediately corrected following the injection, which abruptly lowers the intracranial vascular pressure. Injections of blood are valuable in making a differential diagnosis between cerebral hemorrhage and cerebral softening. Although cerebral hemorrhage is more frequent than softening and the symptoms are often the same, they may be distinguished by the curative action, which is strong in the foci

of cerebral hemorrhage and weak in those of cerebral softening. The authors are at a loss to explain the mechanism by which the intravenous injections act so beneficially on the foci of the cerebral hemorrhage.

Archiv für Gynäkologie, Berlin

156: 407-569 (April 20) 1934. Partial Index

Development and Efficiency of Hysteroscopy. C. Schroeder.—p. 407.
*Influence of Hormone of Posterior Hypophysis on Elimination of Water and Chlorides by Pregnant Organism with Consideration of Hormone Theory of Pathogenesis of Eclampsia. H. Rupp and W. Bickenbach.—p. 420.
Circulation and Basal Metabolism in Pregnancy in Work Experiments. G. Eismayer and A. Pohl.—p. 428.
Biologic Demonstration of Thyroid Hormone in Blood of Pregnant Women. P. Thiessen.—p. 454.
Action of Parathyroid Hormone from Blood of Pregnant Women. F. Hoffmann and E. Rhoden.—p. 459.
*Testing of Hepatic Functions in Hyperemesis Gravidarum. H. R. Schmidt and L. Herold.—p. 463.
*Significance of Hemogram During Delivery for Prognosis of Puerperal Infections, with Especial Consideration of Operative Delivery. T. Koller and L. Bollag.—p. 497.

Hormone of Posterior Hypophysis in Pregnancy.—Rupp and Bickenbach report the reaction of the pregnant organism under the influence of the hormone of the posterior hypophysis. These investigations were made in view of the new theory of the hypophyseal origin of eclampsia. They found that the manner of water elimination under the influence of the hormone of the posterior hypophysis is not changed by the existence of a pregnancy. Observations on the chloride elimination revealed that a sudden action of the hormone of the posterior hypophysis may lead during pregnancy to a temporary increase in the percental quantities of chloride in the urine, but that in case of a continuous water retention under the influence of the hormone of the posterior hypophysis there develops also a chloride retention. The action of the hormone of the posterior hypophysis seems to be masked by the change that takes place in the chloride metabolism during pregnancy. There is no contradiction between the chloride retention during pregnancy and the assumption of an excessive hormone action of the posterior hypophysis in pregnant women.

Hepatic Functions in Hyperemesis Gravidarum.—Schmidt and Herold tested the hepatic functions of twenty-one women with hyperemesis. The outcome of the galactose test indicated a disturbance in the carbohydrate metabolism; namely, a reduced assimilation capacity. The xanthoproteic reaction revealed a disturbance in the intermediate protein metabolism characterized by the presence of aromatic amino acids. The course of the direct, and the quantitative values of the indirect, bilirubin determination disclosed an impairment of the hepatobiliary pigment metabolism. Moreover, it seems probable that the increased porphyrin elemination in the urine was the result of a disordered hepatic function. Although the functional tests of the liver were not all simultaneously positive, they frequently ran parallel with the severity of the clinical aspects or even preceded them. The authors think that these tests are valuable in the estimation of the individual case and aid in deciding the interruption of the pregnancy.

Hemogram During Delivery.—Koller and Bollag studied in 410 cases the changes in the blood picture during spontaneous and pathologic births. They found that an increase in the staff cells during birth indicates that the woman is in great danger of puerperal infection. In cases in which the staff cells increased to more than 25 per cent, puerperal infections developed in more than half of those in whom a vaginal operation was performed and in 80 per cent of those who had to undergo a cesarean section. A temperature higher than 38 C. (100.4 F.) during delivery has not the same value in forecasting puerperal infections as has the increase in the staff cells; however, together with the changes in the hemogram and other clinical signs, the temperature nevertheless should be given consideration. The author considers the study of the hemogram, particularly the staff count, indispensable in estimating the efficacy of a new method of surgical delivery. He emphasizes that this material proved again, just as former studies had done, that in deliveries terminated by vaginal operations the infection mortality was much lower than in those completed by abdominal interventions. These differences are especially noticeable in the groups with greatly increased staff count.

Dermatologische Zeitschrift, Berlin

66: 65-128 (May) 1934

*Experimental Transmission of Mycosis Fungoides. E. Zurhelle.—p. 65.
New Case of Pellagra. H. Bean.—p. 84.
*Scurvy with Pellagroid Cutaneous Manifestations. F. Sagher.—p. 86.
Sensitivity and Desensitization in Eczema of Nurslings. H. Burchard.—p. 92.

Experimental Transmission of Mycosis Fungoides.—Zurhelle points out that in the positive transmissions of mycosis fungoides, which have been reported in the literature thus far, the bacteriologic examination has been neglected. Following a short review of the literature he describes his own transmission experiments on ninety-eight animals (eighty-nine guinea-pigs and nine rabbits). They were inoculated with material from two patients with mycosis fungoides, whose clinical histories the author reports. The difficulties of the bacteriologic investigations and the diversity of their results are revealed especially in the fourth series of tests. In this series one guinea-pig showed considerable changes in the spleen; the bacteriologic examination of these changes gave negative results, while the bacteriologic tests were positive in the guinea-pig inoculated with this material. In summarizing his observations the author states that the changes that can be induced in animals by inoculation with pure cultures of paratyphoid B bacillus or of Bacillus pseudotuberculosis rodentium are observable also in the experimental studies on mycosis fungoides.

Scurvy with Pellagroid Cutaneous Manifestations.—Sagher describes a case of scurvy in which, in addition to a hemorrhagic follicular keratosis, cutaneous symptoms were present like those that have been described as pellagroid. Vitamin therapy counteracted the scurvy as well as the pellagroid cutaneous manifestations within a comparatively short time. The author assumes the simultaneous existence of two different manifestations of vitamin deficiency.

Deutsche medizinische Wochenschrift, Leipzig

60: 735-774 (May 18) 1934. Partial Index

Action of Sauerbruch-Herrmannsdorfer Diet. S. Bommer.—p. 735.
*Prevention of Postoperative Thrombosis and Embolism. W. König.—p. 739.
*Specific Prophylaxis and Treatment of Whooping Cough. Edith Krüger.—p. 741.
Serology and Specific Therapy of Whooping Cough. M. Gundel.—p. 744.

Prevention of Postoperative Thrombosis.—The procedure recommended by König for the prevention of postoperative thrombosis and embolism consists in the oral administration of twenty drops of synephrin tartrate three times a day for seven days or, if this is impossible, in three daily hypodermic injections of 1 cc. of synephrin tartrate and in the inhalation of several breaths of concentrated carbon dioxide every hour for from four to six days. Comparative observations on 4,500 cases revealed that this method gives highly satisfactory results. When the entire surgical material was considered, it was found that under the influence of this treatment the incidence of postoperative thrombosis and embolism was reduced from 3.8 per cent to 1.04 per cent. A consideration of the serious interventions showed an even more striking effect, for here the reduction was from 6.2 per cent to 0.95 per cent. The pulmonary complications, such as pneumonia and bronchitis, were reduced from 9.4 to 3.4 per cent.

Prophylaxis and Treatment of Whooping Cough.—Krüger describes her experiences with a new and improved vaccine prepared by H. Langer. This vaccine contains fifty-eight strains from various epidemics. Especial care was taken that the bacteria had retained their requirements for large amounts of blood in the culture mediums, so that in spite of prolonged cultivation they behaved like fresh strains. The endotoxin was removed as far as possible, so that the vaccine consisted of toxin-free bacterial fractions. In this connection the author calls attention to the fact that in the blood of patients with whooping cough the antagonism of toxin and antitoxin is not the decisive factor, as is the case in diphtheria, but that lysins are formed against the whooping cough bacillus. Thus it is the bacterial body rather than the endotoxin that is the stimulus for the antibody formation. The author thinks that the absence of the endotoxin accounts for the fact that the vaccine is so well tolerated. In the course of over 200

injections, she never observed unfavorable local reactions or disturbances in the general condition. She ascribes to the action of the protein the slight fever that developed in some cases. She employed this vaccine in forty-two children. It was administered by intramuscular injections. Four injections were given in the course of eight days. The first dose contained five, the second ten, the third fifteen and the fourth twenty billions of organisms. Good results were obtained during the first and second stages of the whooping cough. In the children in whom the vaccine was given later, failures were frequent. Ten children who were exposed to whooping cough were given prophylactic treatment with the vaccine, and seven of them were protected. The author recommends the prophylactic use particularly for infants, because in this group the mortality of whooping cough is rather high.

Deutsche Zeitschrift für Chirurgie, Berlin

243: 689-821 (May 4) 1934. Partial Index

*Effect of Compound Solution of Iodine on Hyperthyroidism and Dysthyroidism. F. J. Irsigler.—p. 689.
Chemistry of the Formation of a Gastric Ulcer. H. Tamesue.—p. 706.
Congenital Vertebral Synostosis and Primary Congenital Scoliosis. W. Lohmuller.—p. 714.
Spontaneous Injury of Two Serous Cavities with Particular Attention to Open Communications Between Chest and Abdomen. E. Just.—p. 723.
Immediate and Remote Results of Cholecystogastrostomy, Cholecystoduodenostomy and Choledochoduodenostomy in One Hundred and Twenty-Eight Cases. F. Bernhard.—p. 736.
Treatment of Thoracic Empyema with Suction-Irrigation Drainage. M. Tiegel.—p. 757.

Influence of Iodine on the Thyroid.—Irsigler states that the influence of iodine on the thyroid is due to its effect on the epithelial cells of the follicles. The action, in accordance with the general biologic law, is first that of stimulation and later that of paralysis and destruction of the cell and its replacement by regenerative processes. The function of the follicular epithelium expresses itself in two directions: 1. The building up of the specific thyroid secretion, which is either stored in the lumen of the follicle or is directly absorbed from the cell into the blood circulation and is recognizable at the periphery by its biologic effect. 2. The resorption of the stored up secretion after the latter was converted into an absorbable form, to supply increased demand by the organism. The morphologic expression of these processes are to be found in the consistency of the stored up secretion designated by the terms "thick" and "thin" and further by histologic reactions to fixation and coloration as shown in the phenomenon of true vacuolization. The enlargement of the inner surfaces of the thyroid under the influence of iodine in the form of nodosities and papillae can be best explained from this point of view. Both functions of the follicular epithelium may be influenced by the iodine, and there is no way of obtaining at will the desired effect in every case. This constitutes the blind principle in the action of iodine and therefore contains a certain element of danger in the iodine treatment of goiter. The histologic effect of iodine in hyperthyroidism of human beings presents a picture of fairly characteristic alterations in the histologic sections. The histologic effect, however, is not proportional to the duration of the exhibition of the compound solution of iodine, nor does it always correspond to the clinical effect.

Klinische Wochenschrift, Berlin

13: 649-680 (May 5) 1934

Significance of Hereditary Research. B. Patzig.—p. 649.
Significance of Vagus for Parasympathetic Innervation of Abdominal Organs. K. Kure.—p. 651.
*Pathogenesis and Therapy of Anemia in Premature Infants. F. Thoenes.—p. 654.
*Endemic with Pneumococcus of Type I. G. Joppich.—p. 661.
*Cause of Inhibition of Agglutination in Retroplacental Blood of Pregnancies with Foreign Blood Group. G. Säker.—p. 662.
Influence of Intermedin and of Thyrotropic Substance of Anterior Lobe of Hypophysis on Epinephrine and Ascorbic Acid in Suprarenals. A. G. Holmquist.—p. 664.
Movements in Cerebrospinal Fluid System. Wustmann.—p. 666.

Anemia in Premature Infants.—Thoenes shows that medication with iron or liver preparations does not prevent anemia in premature infants and concludes from this that it is not a deficiency disease. He thinks that it is due to the same processes that produce a reduction of the hemoglobin and of the erythrocytes in full-term infants and occasionally lead here also to a mild anemia. These processes resemble "acclimatization manifestations," that is, they result from the adaptation of the organs to the greater oxygen supply compared to the intrauterine conditions, for the improved provision with oxygen leads to the disintegration of the elements no longer necessary for oxygen transport. These blood elements decrease because birth terminates the intra-uterine anoxemia that served as a stimulus for their formation. The premature infant must complete the intra-uterine development under conditions to which the developmental stage of its organs are not yet fully adapted. The hematopoietic apparatus, particularly, is still adapted to the metabolic processes of the fetus, that is, to a comparatively small oxygen supply, and this anoxemia, which exerts a strong stimulus on the erythropoiesis, is prematurely terminated by a too early delivery. Thus it is understandable why the erythropoietic organs of the premature infants under changed conditions fail to come up to the requirements to which they are equal only under the stimulus of the intra-uterine anoxemia. The author concludes that the physiologic anemia of premature infants is the result of a relative insufficiency of the hematopoiesis, which is hardly at all amenable to treatment.

Endemic with Pneumococcus of Type I.—Joppich reports an influenza-like endemic, which occurred in a children's home. A boy, aged 2, developed double pneumonia, suppurating pleurisy and suppurating meningitis and died. The cerebrospinal fluid contained pneumococci of type I and the same organism was found in the lungs and in the pleural pus. Histologic examination of the lungs revealed a localized pneumonia. Several days later, three other children, aged 9, 11 and 13, developed lobar pneumonia. Type I pneumococcus was also found in these children. An inspection of the home at this time revealed that of twenty-nine children twenty-one were ill, as were also several adults. The respiratory tract was affected (pharyngitis, tracheitis, bronchitis). Some of the patients were feverish for several days, while in others the general condition was only slightly impaired. There was no connection between the severity of the disturbance and the ages of the patients. Nasopharyngeal smears were taken from thirty persons and twenty-three smears yielded pneumococci, fifteen of them belonging to type I. Several observations made in the course of this endemic are significant for the pneumococcus problem. Perhaps the most important observation is that the type I pneumococcus does not always lead to lobar pneumonia but that in most instances it causes only mild catarrhs or a localized pneumonia (first case mentioned). The author thinks that this explains why lobar pneumonia occurs only rarely as an epidemic. He assumes that the resistance plays a part.

Inhibition of Agglutination in Retroplacental Blood.—In tests on the intervillous blood and the amniotic fluid of pregnancies with foreign blood groups, Säker was able to determine that the decrease in the agglutinin titer of the retroplacental blood was the result of a specific inhibition by fetal antigen. However, there is no transition of fetal agglutinogens through the placenta into the retroplacental blood. The author thinks that the decrease in the specific agglutinin is due to an admixture of amniotic fluid, which cannot be avoided at the moment of the expulsion of the placenta.

Medizinische Klinik, Berlin

30: 597-628 (May 4) 1934. Partial Index

*Occupational Diseases of Dentists. J. Löwy.—p. 601.
*Hormonic Treatment of Circular, Later Complete Loss of Hair (Alopecia Areata) of Head. H. Höcker.—p. 603.
Epilepsy During Childhood. K. Rupilius.—p. 604.
Tuberculous Etiology of Articular Rheumatism. Anne Marie Kulka.—p. 608.
Rare Case of Severe Insular Diabetes with Extra-Insular Involvement. U. Winkler.—p. 610.
Cholecystography in Standing Position and Its Diagnostic Significance. E. Ungar.—p. 611.
New Indication for Use of Hormone of Anterior Hypophysis. H. Kopf.—p. 613.
Consistency of Mud and Moor Packs and Baths. E. Freund.—p. 613.

Occupational Diseases of Dentists.—Löwy classifies the occupational diseases of dentists into three groups: (1) those caused by unsuitable posture during work, (2) infectious diseases and (3) poisonings. Whether the frequent neurasthenia is a disease *sui generis* he is unable to decide, but he thinks that it

may be due to prolonged confinement in closed rooms. In discussing the disorders caused by unsuitable posture, he mentions first the thoracic changes, which in turn may lead to cardiac and circulatory disorders. Prolonged standing may lead to the development of flatfoot and varicose veins. Removal of tartar from the teeth involves the danger of corneal injuries, and handling of plaster of paris may lead to the formation of rhagades. The infectious diseases that threaten the dentist are particularly those of the upper respiratory tract, such as diphtheria, catarrhs, influenza, tonsillitis, measles, scarlet fever and tuberculosis. There is also a certain danger of an extragenital syphilitic infection. The frequent use of the roentgen apparatus likewise involves dangers. The use of certain chemicals may lead to eczema. One of the greatest dangers is chronic poisoning by mercury. The author thinks that nervousness, which occurs rather frequently in dentists, is often the result of chronic poisoning. Dentistry as a profession is inadvisable unless the person has a normal nervous system and an intact respiratory apparatus; the nasal breathing, particularly, should be free. There should be no predisposition to curvature of the spine or to the development of flatfoot and varicose veins.

Hormone Treatment of Loss of Hair.—Höcker points out that the pathogenesis of alopecia areata is not completely understood. Some assume a parasitic, others a neurogenous and still others an incretory origin. The author recommends caution in the therapeutic evaluation of hormone therapy in alopecia. The therapeutic value of a hormone preparation must be proved in severe cases and its effect must be lasting. He gives the history of a woman who at the age of 19 first observed small hairless areas on the occiput. These areas increased in size and, in spite of quartz lamp irradiations, embrocations with croton oil and other preparations, she finally lost all her hair. The woman had always had menstrual disturbances, her menarche was late and after that she was amenorrheal for a time. She also exhibited symptoms indicating a hyperfunction of the anterior lobe of the hypophysis. Under the influence of oral administration of a follicular hormone preparation, a downy, colorless hair growth appeared and the menstrual flow was normalized. When after three months growth of the hair ceased, the doses of hormone were increased: not only were larger oral doses given (450 mouse units daily) but, in addition to this, 200 mouse units was administered by subcutaneous injection. Gradually the hair growth increased again, but after a while the hormone therapy was discontinued and three months later the hair began to fall out again. Renewed daily hormone injections (1,000 mouse units) increased the hair growth again. The observation covered three years but the improvement never became a complete cure. The author believes that hormone therapy alone is not sufficient to reestablish normal hair growth.

Münchener medizinische Wochenschrift, Munich

81: 739-776 (May 18) 1934. Partial Index

Pregnancy and Heart Disease. H. Küstner and R. Schoen.—p. 739.
Sedatives. E. Frey.—p. 743.
*Successes and Failures in Treatment of Female Gonorrhea. K. Johnen.—p. 746.
Conditions of Anxiety, Their Psychology and Treatment. G. Giehm.—p. 749.
*First Results of Treatment of Schizophrenia with Placental Blood. J. S. Galant.—p. 752.
*Removal of Tattooing by Method Applicable by Practitioner. H. in der Stroth.—p. 753.

Treatment of Gonorrhea in the Female.—In evaluating the therapy Johnen cites the results obtained by different workers with vaccines of killed or of living organisms and with mixed vaccine. While some report favorable results, others experienced serious complications, and for this reason the author dispensed with the vaccine therapy. Of the nonspecific therapeutic methods he discusses the active local therapy, fever therapy and conservative therapy. The conservative treatment consists in strict rest in bed, the application of ice bags, poultices, heat in the form of hot pads or diathermy and occasional vaginal irrigations. Thus it is limited to general measures and dispenses with local therapy. At the author's clinic, the patients with signs of a new ascending infection or an acute pelveoperitonitis with high fever were treated conservatively, while those without fever were subjected to local therapy. A comparison of the results reveals that the local treatment is not superior to the conservative treatment and has the disadvantage that ascending processes are more frequent. The author does not advocate the general employment of conservative treatment in gonorrhea because he realizes that two factors were essential in its efficacy: (1) strict clinical supervision and (2) all the patients had high fever, so that they received an involuntary fever therapy. The author states that the results of the local treatment were considerably improved with the introduction of a new acridine preparation that contains arsenic in an organic form. From 1 to 4 cc. of a 2 per cent solution of the preparation is introduced by slow injection into the urethra and the cervix. The treatment usually requires eight injections. In cases of rectal gonorrhea from 2 to 4 cc. of a 0.25 per cent solution is administered. Of twenty-one women with chronic gonorrhea, eighteen recovered as a result of this treatment. Moreover, this method reduces the duration of the treatment considerably.

Placental Blood in Treatment of Schizophrenia.—Galant treated thirty-seven patients presenting various forms of schizophrenia, such as the katatonic, hypochondriac, paranoid and hebephrenic types, with subcutaneous injections of placental blood. The blood is obtained from the placental end after cutting of the umbilical cord. The injections are made either daily or after intervals of from two to three days. During the first treatment 4 cc. is given, and during the subsequent injections the amount is increased by 2 cc. until a total of 10 cc. has been reached. In all, fifteen injections are given. The blood must be fresh; that is, it must be injected on the day of withdrawal, otherwise undesirable complications are likely (increase in temperature, headaches, vomiting). This hemoplacental therapy effects a considerable improvement in the general condition of most schizophrenic patients in that their weight increases. The psychotic condition is influenced in that the stuporous patients become livelier and the agitated ones become calmer. The stuporous patients are improved to such an extent that they can be subjected to work therapy, which was previously impossible. In discussing the action mechanism of the hemoplacental treatment, the author points out that it involves two factors, a biologic action and a psychotherapeutic action. The first of these in turn involves two factors, the protein shock therapy and the hormone action, for the placental blood doubtlessly contains large amounts of hormones. The psychotherapeutic effect is due to emotional shock and to suggestion. At the beginning of the treatment the hemotherapy may lead to hallucinations, but these usually pass off rapidly. If the first series of injections produces no definite results, a second series may be given after six or eight months.

Simple Method for Removing Tattooing.—Since none of the commonly used methods for the removal of tattooing proved entirely satisfactory, in der Stroth followed Bruck's suggestion and employed an ointment representing a modification of the pyrogallic ointment that Unna employed in the treatment of lupus. The ointment is freshly prepared from 7 Gm. each of pyrogallic acid, salicylic acid and resorcinol, 5 Gm. each of glycerin and diluted alcohol and 1 Gm. of tragacanth. The area around the tattooed pattern is protected by covering it thickly with zinc ointment. A piece of impregnated gauze, the size of the tattooed area, is covered with the caustic ointment and is applied to the tattoo in such a manner that the margin of the gauze rests on the zinc paste. The entire application is securely fixed by layers of gauze and by adhesive tape. This bandage is removed after twenty-four hours. At this time the epidermis can be removed. A new caustic ointment bandage is applied in the same manner as the first, but this second one is left in place for forty-eight hours. After this time the area has usually become necrotic, and only in exceptional cases does a third application of the caustic ointment become necessary. As a rule, the area can be cleansed with oil after the second application, and then the necrotic tissues gradually slough off, the process being completed in from five to seven days. Following that, granulation sets in and in the course of three or four weeks a smooth scar has taken the place of the tattoo. The author emphasizes that the method is so simple that the general practitioner can readily employ it. The patient should be told that, during the time the caustic ointment is applied, there is considerable pain, but this can be reduced by the use of sedatives. Other undesirable complications, such as intoxications, were never observed.

Wiener klinische Wochenschrift, Vienna

47: 609-640 (May 18) 1934

Increase in Apoplexia in Young Persons. O. Pötzl.—p. 609.
Biology of Diphtheria Epidemics. R. Uhlirz.—p. 615.
Operation of Large Umbilical Hernias. H. Linsmayer.—p. 617.
*Methylene Blue-Sugar in Treatment of Poisoning by Suffocating Gases. F. Deutsch and E. Weiss.—p. 618.
*Histamine Susceptibility. S. Karády.—p. 622.
Irregular Pulse. H. Elias.—p. 625.
Pathology of Pelvis and Birth. W. Weibel.—p. 625.

Methylene Blue-Sugar in Poisoning by Suffocating Gases.—Deutsch and Weiss report that a patient, who on account of allergic colitis and hyperthyroid glycosuria was treated with high doses of alkaline substances and with methylene blue (methylthionine chloride) clysters, stated that since he received the alkaline preparation the urine was no longer blue as it had been when he was treated only with methylthionine chloride. This reminded the authors of the sugar test in which methylthionine chloride, by heating with alkaline dextrose solution, becomes colorless, but when the mixture cools and is shaken in the air the resorption of oxygen brings back the stain. The oxygen transmission can be repeated by alternating heating and cooling, and this oxidation-reduction process resembles the metabolism of living substances. The authors review studies carried out by Thunberg and by Warburg, and these studies as well as their own observations on the patient with glycosuria induced them to determine whether the reaction of methylthionine chloride with oxygen could be clinically utilized when the oxidation was impaired. In preparing an alkaline methylthionine chloride-sugar solution, they found that a solution of from 0.25 to 1 Gm. of methylthionine chloride and 10 cc. of dextrose in 100 cc. was most suitable. They made experiments on animals and also on tissue cultures, and, on the basis of the results obtained in these, they gave intravenous injections of from 20 to 30 cc. of the methylthionine chloride-sugar solution in cases of carbon monoxide poisoning and obtained favorable results. Later Geiger's successful use of a 1 per cent solution of methylthionine chloride came to their attention and a review of the literature revealed that Moldenhauer-Brooks had employed methylthionine chloride in poisoning with hydrocyanic acid, and that several other investigators had studied this problem. In discussing the objection made by Haggard and Greenberg that the use of methylthionine chloride could not be supported, the authors point out that the action of methylthionine chloride is not merely the result of the binding of the toxin but also of the stimulation of the oxidation. The addition of sugar increases this action still further, as indicated by Warburg's studies. The authors think that the treatment with methylthionine chloride-sugar solution is indicated in poisoning with the various suffocating gases and suggest its investigation for use in disorders, in which the oxygen carrier is impaired, such as in pernicious anemia, or in which the tissue respiration is threatened by anoxemia.

Histamine Susceptibility.—Karády shows that researches of recent years revealed the importance of the antagonism between the "tissue hormone" histamine and the suprarenal hormone epinephrine. This antagonism plays a part also in the regulation of the blood pressure. In former studies histamine was generally administered by subcutaneous injection, but, since this method had certain shortcomings, the author resorted to the intravenous injection. He dilutes a 1:1,000 histamine preparation at the ratio of 1:100 so that 0.5 cc. contains 0.005 mg. The systolic blood pressure is determined before the injection and then every fifteen seconds after the injection. A decrease in blood pressure becomes usually noticeable within fifteen or twenty seconds after the injection; but still within the first minute the decrease is followed by an increase up to the initial level or even beyond it. In some instances the difference between the minimal and maximal pressure is more than 100 mm. of mercury. During the increase in pressure tachycardia develops. Two minutes or at the latest three minutes after the injection, the blood pressure again decreases to the initial value, and in excitable persons it may maintain a lower level for a longer period. The author made these tests on 200 patients suffering from various disorders. He found that the curves of the pressure fluctuations can be classified in four distinct types. The first type of curve shows a pressure decrease of from 25 to 30 mm. of mercury from fifteen to thirty seconds after the injection. This type was observed in 106 patients presenting various disorders, such as gastrointestinal disease, tuberculous changes, bronchial asthma, pernicious anemia, late syphilitic disorders, myxedema, arthritis, various disturbances of the kidney and liver, lead poisoning, poliomyelitis and other disturbances. In the second type of curve a decrease of from 10 to 60 mm. of mercury is followed by an increase of from 40 to 120 mm. of mercury. This type of curve was noted in fifty-two patients, and the author states that it is often present in persons having hypertension. The third type of curve shows slight fluctuations, a decrease of from 5 to 6 mm. of mercury and a return to normal values or slightly above within one minute. This type of curve was found in patients having hyperthyroidism and exophthalmic goiter. The fourth type of curve is characterized by a moderate decrease (10 mm.) and then by a moderate increase (10 mm.). There are only slight subjective symptoms. This curve was observed in neurasthenic patients, generally with some acute disorder. In the conclusion the author stresses that the peripheral vasodilatation, the pulmonary and hepatic blockage, which play a part in the decrease of the blood pressure following histamine action, are also important in the development of collapse, and he assumes that there is a certain similarity between histamine shock and collapse. If further tests will definitely establish this, the method may prove helpful in the detection of a predisposition to collapse and will make its prevention possible.

Zentralblatt für Gynäkologie, Leipzig

58: 1089-1152 (May 12) 1934

Reactivation of Senile Human Ovaries. A. Westman.—p. 1090.
*Biologic Effects of Hormones in Lutein Cysts, in Case of Cystic Mole and Chorio-Epithelioma. H. Siegmund.—p. 1097.
*Form, Genesis and Modification of Leukocytosis in the New-Born. E. Ehrenfeld.—p. 1103.
Fundamentals of Balneology for Gynecologists. W. Engelmann.—p. 1108.
Cesarean Section and Myoma. L. Schack.—p. 1110.

Effects of Hormones in Lutein Cysts.—Siegmund discusses the explanations that have been given for the development of lutein cysts. It seems that they appear when the hormone equilibrium is disturbed so that there is a pathologic predominance of the gonadotropic hormones, that is, in cases of cystic mole and of chorio-epithelioma. They develop from abnormally growing and ripening follicles. As the result of the presence of these lutein cysts, women are kept for weeks in a condition resembling pregnancy. This condition is not due to remnants of chorionic tissue or to increased elimination of hormones of the anterior hypophysis but results from the hormones (folliculin, corpus luteum hormone and gonadotropic principles) contained in the lutein cysts. The assumption that the condition is the result of hormones stored in the cysts is corroborated by the spontaneous disappearance of the cysts and the simultaneous elimination of hormones in the urine, by the rapid cessation of hormone elimination following extirpation of the cysts and by the behavior of the milk glands after extirpation.

Leukocytosis in the New-Born.—Ehrenfeld shows that, although the investigators agree on the presence of leukocytosis in the new-born, they disagree on its causes. Some assume an increased activity of the bone marrow, while others maintain that the increase is only apparent and is the result of a loss of fluid. In order to clear up this problem, the author fed tea to one group of newly born infants, beginning with the third hour after delivery. This addition of tea was later continued with every breast meal until the nursling commenced to gain weight. Another group of nurslings was, as customary in the author's clinic, put to the breast twenty-four hours after delivery and after that every three hours but was given no tea. The number of leukocytes was studied in both groups and the author concludes that the increase in leukocytes in the new-born is not the result of a stimulation of the bone marrow and is not due to influences from the digestive tract but is the manifestation of an anhydremia. This loss of water from the blood plasma may be prevented or at least reduced by feeding with tea. A study of the types of leukocytes reveals that the neutrophils predominate at birth, but within a few days this neutrophilia is replaced by the lymphocytosis that is characteristic of the nursling age. The

percental distribution of the various types of leukocytes was found to be practically the same in the two groups of nurslings. The addition of fluid produces no abnormal conditions and the difference in the leukocyte values corresponds to the concentration of the plasma.

Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

78: 1822-1928 (April 28) 1934

Foreign Bodies in Esophagus and Respiratory Tract. C. E. Benjamins and E. Huizinga.—p. 1829.
Remarks on May-Grunwald Stain. N. van der Walle.—p. 1843.
*Treatment of Ulcerous Colitis with Blood Transfusions. L. A. Hulst and H. A. P. Hartog.—p. 1849.
Cowpox Infection in Human Beings. J. A. C. Schepel.—p. 1855.
Lipogranulomatosis. S. M. Kropveld.—p. 1860.

Treatment of Ulcerous Colitis with Blood Transfusions.—Hulst and Hartog administered from 400 to 500 cc. of citrated blood, comprising from 40 to 50 cc. of trisodium citrate at 2.5 per cent, to four patients presenting ulcerous colitis. These transfusions were administered only after dietetic and medical treatment had been tried and found wanting. The authors maintain, however, that even after transfusion the patients should adhere to a strict diet. Transfusions were given three weeks apart. If several transfusions from one donor did not offer appreciable results, the blood of another donor was injected. Two patients evinced immediate improvement, while the other two began to improve only after repeated transfusions. A negative result did not occur in any case. The authors found it desirable to repeat the transfusions if the patient did not rapidly respond to treatment. They are at a loss to explain by what mechanism the favorable effect is procured.

Acta Radiologica, Stockholm

15: 89-192 (April 15) 1934

Heat Therapy of Malignant Tumors. K. Overgaard.—p. 89.
Simultaneous Recording of Cardiac Movements and Sounds by Roentgen Ray (Kymophonoroentgenography). I. S. Hirsch and M. Schwarzschild.—p. 101.
Roentgenkymography by Stumpf Method as Method of Examining the Heart. B. Thre.—p. 107.
Method for Roentgen Examination of Hypopharynx and Upper Air Passages. G. Jönsson.—p. 125.
Reactions to Radiation in Lymph Nodes Containing Carcinoma Metastases of Squamous Cell Type. L. McGregor.—p. 129.
Axial Torsion of Colon Through So-Called Physiologic Volvulus. K.-E. Groth.—p. 153.
Porcelain Gallbladder in Roentgenogram. R. Blatter.—p. 169.
*Roentgenologic Characteristics of Echinococcus Disease in Bones. G. Claessen.—p. 178.

Echinococcus Disease in Bones.—Two new cases of echinococcus bone cyst formation and two previously reported cases are described by Claessen. Echinococcus disease of bones constitutes from 1 to 2 per cent of all cases of echinococcus parasitism. It is most frequently localized in the pelvis, but hardly any part of the skeletal system appears to be totally exempt. In one of the cases reported the ilium and head of the femur were involved; in another the sacrum; in one the diaphysis of the femur and in one the fibula. The infiltration is usually not sharply limited but seems to have some preference for spongy bone. The differential diagnosis from tuberculosis, osteosarcoma and fibrous cystic osteitis is often difficult, but the absence of regional bone atrophy and of periosteal reaction in echinococcus disease may be of important diagnostic significance. The limits of the echinococcus extension can rarely be determined with certainty from the roentgenograms.

Bibliotek for Læger, Copenhagen

126: 137-186 (April) 1934

*Disseminated Encephalomyelitis (Redlich) and Infectious Funicular Encephalomyelitis: Cen. C. J. Munch-Petersen.—p. 137.

Disseminated Encephalomyelitis (Redlich) and Infectious Funicular Encephalomyelitis.—Munch-Petersen seeks to define more closely a certain clinical form of infection of the central nervous system, assuming that funicular spinal disease is due to a constitutional factor. It seems to him probable that with the increase in neuro-infections in recent years some of these will present a "funicular" picture. He reports twenty-seven cases, mainly chronic, of a possible neuro-infectious kind, with a clinical picture of more or less marked funicular character, for which the term myelitis or infectious funicular encephalomyelitis is suggested. He calls attention to the lack of symptoms pathognomonic of multiple sclerosis in the cases regarded as funicular encephalomyelitis. A single etiologic factor is thought probable for multiple sclerosis, but for encephalomyelitis the possibility of several known or unknown kinds of virus must be considered. Clinically, and presumably also anatomopathologically, transition forms between multiple sclerosis and infectious encephalomyelitis are likely.

Hospitalstidende, Copenhagen

77: 369-396 (March 27) 1934

*Attempt at Treatment of Pernicious Anemia with Yeast or Yeast Preparations Incubated with Normal Gastric Juice. H. C. A. Lassen and H. K. Lassen.—p. 369.
Nephrolithiasis—Generalized Osteitis Fibrosa—Hyperparathyroidism. H. Strandgaard.—p. 383.

Treatment of Pernicious Anemia with Yeast Incubated with Normal Gastric Juice.—The Lassens treated seven patients with pernicious anemia by this method. Through experiments in animals the various yeast preparations were titrated with regard to their vitamin B_1 and B_2 content. One preparation contained no B_1 but showed marked activity in vitamin B_2 deficiency in rats. The authors assert that the extrinsic factor described by Castle is not identical with vitamin B_2 or with any fraction of the vitamin B complex. Yeast either has no antianemic efficiency or possibly contains minimal quantities of the antianemic factor. No increase in the amount of active principle by the addition of normal gastric juice was definitely established.

77: 397-408 (April 3) 1934

Treatment with Corpus Luteum Hormone: Preliminary Report. K. Portman.—p. 397.
*Investigations on Fermentation of Galactose in Bauer's Liver Function Test. T. Geill.—p. 404.

Investigations on Fermentation of Galactose in Bauer's Liver Function Test.—In Bauer's galactose test in a number of cases Geill determined the sugar content by fermentation and by polarization. He reports that the agreement in the results obtained confirms that the saccharide eliminated in the liver function test is really galactose and that polarimetric determination after preliminary treatment with acetic acid and animal charcoal gives exact values.

77: 409-436 (April 10) 1934

Congenital Dystrophia Brevicollis. H. Nielsen.—p. 409.
*Fatal Case of Silicosis. S. V. Gudjonsson and C. J. Jacobson.—p. 423.
*Erythrophagia in Circulating Blood: Two Cases. J. Engelbreth-Holm.—p. 431.

Silicosis: Fatal Case.—On microscopic examination of lung tissue and of ash from lung tissue in a typical, uncomplicated case of silicosis in a porcelain turner Gudjonsson and Jacobson found numerous mineral needles resembling kaolin. The results are thought partly to support W. R. Jones's theory that silicosis is due to fibrous minerals and to show that kaolin probably can act like serecit.

Erythrophagia in Circulating Blood.—Engelbreth-Holm ascribes erythrophagia in the circulating blood to injured or foreign erythrocytes in the blood stream, infections, especially endocarditis lenta, or splenectomy. In his cases of transient erythrophagia in patients with eczema and tuberculous lymphoma, respectively, no pathologic cause of the erythrophagia could be found and the possibility is suggested that in rare instances erythrophagia may occur normally in the circulating blood.

Ugeskrift for Læger, Copenhagen

96: 423-446 (April 19) 1934

Congenital Dislocation of Hip. A. Berntsen.—p. 423.
*Sinus Arrhythmia with Appearance of Adams-Stokes Syndrome: Case. V. Thomsen.—p. 426.
Undulant Fever with Meningism: Case. O. Raagaard.—p. 430.
Agranulocytosis in Patient Treated with Amidopyrine: Case. B. Larsen.—p. 430.
Amidopyrine Exanthem Without Changes in Blood: Case. P. Hansen.—p. 431.

Sinus Arrhythmia and Adams-Stokes Syndrome.—Thomsen believes the arrhythmia in his case to be due to a partial disorder of the sinus node. He calls attention to the fact that the Adams-Stokes syndrome is not exclusively connected with atrioventricular block but can also occur with sinuauricular block and with sinus arrhythmia, usually regarded as innocent disorders.

JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JANUARY-JUNE, 1934

Abstracts of important articles in the following journals have been made in the Current Literature Department of THE JOURNAL during the past six months. Any of the journals, except those starred, will be lent by THE JOURNAL to subscribers in continental United States and Canada and to Fellows of the American Medical Association for a period not exceeding three days. Two journals may be borrowed at a time. No journals are available prior to 1925. Requests for periodicals should be addressed to the Library of the American Medical Association and should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Thus most of these journals are accessible to the general practitioner.

Acta Chirurgica Scandinavica. Stockholm.
Acta Obstetricia et Gynecologica Scandinavica. Helsingfors.
Acta Orthopaedica Scandinavica. Copenhagen.
Acta Radiologica. Stockholm.
American Heart Journal. St. Louis.
American Journal of Anatomy. Philadelphia.
American Journal of Cancer. New York.
American Journal of Clinical Pathology. Baltimore.
American Journal of Digestive Diseases and Nutrition. Chicago.
*American Journal of Diseases of Children. A. M. A., Chicago.
American Journal of Hygiene. Baltimore.
American Journal of the Medical Sciences. Philadelphia.
American Journal of Obstetrics and Gynecology. St. Louis.
American Journal of Ophthalmology. St. Louis.
American Journal of Orthopsychiatry. Menasha, Wis.
American Journal of Pathology. Boston.
American Journal of Physiology. Baltimore.
American Journal of Psychiatry. New York.
American Journal of Public Health. New York.
American Journal of Roentgenol. & Rad. Therapy. Springfield, Ill.
American Journal of Surgery. New York.
American Journal of Syphilis and Neurology. St. Louis.
American Journal of Tropical Medicine. Baltimore.
American Review of Tuberculosis. New York.
Anales de Medicina Interna. Madrid.
Anales de la Sociedad Médico-Quirurgica del Guayas. Guayaquil.
Anatomical Record. Philadelphia.
Annales de Médecine. Paris.
Annales Société Belge de Médecine Tropicale. Brussels.
Annals of Internal Medicine. Lancaster, Pa.
Annals of Medical History. New York.
Annals of Otology, Rhinology and Laryngology. St. Louis.
Annals of Pickett-Thomson Research Laboratory. London.
Annals of Surgery. Philadelphia.
Archiv für Dermatologie und Syphilis. Berlin.
Archiv für Gynäkologie. Berlin.
Archiv für klinische Chirurgie. Berlin.
Archiv für Verdauungs-Krankheiten. Berlin.
*Archives of Dermatology and Syphilology. A. M. A., Chicago.
Archives of Disease in Childhood. London.
*Archives of Internal Medicine. A. M. A., Chicago.
Archives des Maladies du Cœur. Paris.
Archives des Maladies des Reins. Paris.
Archives de Médecine des Enfants. Paris.
Archives Medico-Chirurgicales de l'Appareil Respiratoire. Paris.
*Archives of Neurology and Psychiatry. A. M. A., Chicago.
*Archives of Ophthalmology. A. M. A., Chicago.
*Archives of Otolaryngology. A. M. A., Chicago.
*Archives of Pathology. A. M. A., Chicago.
Archives of Physical Therapy, X-Ray, Radium. Chicago.
*Archives of Surgery. A. M. A., Chicago.
Archivos de Medicina, Cirugia y Especialidades. Madrid.
Beiträge zur Klinik der Tuberkulose. Berlin.
Beiträge zur klinischen Chirurgie. Berlin.
Bibliotek for Læger. Copenhagen.
Brain. London.
Brasil-Medico. Rio de Janeiro.
Bristol Medico-Chirurgical Journal.
British Journal of Anæsthesia. Manchester.
British Journal of Children's Diseases. London.
British Journal of Dermatology and Syphilis. London.
British Journal of Experimental Pathology. London.
British Journal of Ophthalmology. London.
British Journal of Physical Medicine. London.
British Journal of Radiology. London.
British Journal of Surgery. Bristol.
British Journal of Tuberculosis. London.
British Journal of Urology. London.
British Medical Journal. London.
Bulletin of the Johns Hopkins Hospital. Baltimore.
Bulletin of Naval Medical Association. Japan, Tokyo.
Bulletin of Neurological Institute of New York. New York.
California and Western Medicine. San Francisco.
Canadian Medical Association Journal. Montreal.
Canadian Public Health Journal. Toronto.
Chinese Medical Journal. Peiping.
Chirurg. Berlin.

*Cannot be lent.

Clinica Medica Italiana. Milan.
Clinical Science. London.
Colorado Medicine. Denver.
Delaware State Medical Journal. Wilmington.
Dermatologische Wochenschrift. Leipzig.
Dermatologische Zeitschrift. Berlin.
Deutsche medizinische Wochenschrift. Leipzig.
Deutsche Zeitschrift für Chirurgie. Berlin.
Deutsche Zeitschrift für Nervenheilkunde. Berlin.
Deutsches Archiv für klinische Medizin. Berlin.
Dia Médico. Buenos Aires.
Diagnostica e Tecnica di Laboratorio. Naples.
Die medizinische Welt. Berlin.
East African Medical Journal. Nairobi.
Edinburgh Medical Journal.
Endocrinology. Los Angeles.
Finska Läkaresällskapets Handlingar. Helsingfors.
Fukuoka-Ikwadaigaku-Zasshi. Fukuoka.
Geneeskundige Gids. The Hague.
Glasgow Medical Journal.
Guy's Hospital Reports. London.
Gynécologie et Obstétrique. Paris.
Hospitalstidende. Copenhagen.
Hygiea. Stockholm.
Illinois Medical Journal. Chicago.
Indian Journal of Medical Research. Calcutta.
Indian Medical Gazette. Calcutta.
Indian Medical Research Memoirs. Calcutta.
International Journal of Psycho-Analysis. London.
Irish Journal of Medical Science. Dublin.
Jahrbuch für Kinderheilkunde. Berlin.
Japanese Journal of Experimental Medicine. Tokyo.
Japanese Journal of Gastroenterology. Kyoto.
Japanese Journal of Obstetrics and Gynecology. Kyoto.
Journal de Médecine de Paris.
Journal of Alabama State Medical Association. Montgomery.
Journal of Allergy. St. Louis.
Journal of Anatomy. London.
Journal of the Arkansas Medical Society. Fort Smith.
Journal of Bacteriology. Baltimore.
Journal of Biological Chemistry. Baltimore.
Journal of Bone and Joint Surgery. Boston.
Journal de Chirurgie. Paris.
Journal of Clinical Investigation. New York.
Journal of Comparative Neurology. Philadelphia.
Journal of Experimental Medicine. New York.
Journal of the Florida Medical Association. Jacksonville.
Journal of General Physiology. New York.
Journal of Hygiene. London.
Journal of Immunology. Baltimore.
Journal of the Indiana State Medical Association. Indianapolis.
Journal of Industrial Hygiene. Baltimore.
Journal of Infectious Diseases. Chicago.
Journal of Iowa State Medical Society. Des Moines.
Journal of Kansas Medical Society. Topeka.
Journal of Laboratory and Clinical Medicine. St. Louis.
Journal of Laryngology and Otology. London.
Journal of Medical Association of Georgia. Atlanta.
Journal of Medical Society of New Jersey. Trenton.
Journal of Mental Science. London.
Journal of Michigan State Medical Society. Grand Rapids.
Journal of Missouri State Medical Association. St. Louis.
Journal of Nervous and Mental Disease. New York.
Journal of Neurology and Psychopathology. London.
Journal of Nutrition. Philadelphia.
Journal of Obstetrics and Gynecology of British Empire. Manchester.
Journal of Oklahoma State Medical Association. McAlester.
Journal of Oriental Medicine. South Manchuria.
Journal of Pathology and Bacteriology. Edinburgh.
Journal of Pediatrics. St. Louis.
Journal of Pharmacology and Experimental Therapeutics. Baltimore.
Journal of the Philippine Islands Medical Association. Manila.
Journal of Physiology. London.
Journal of South Carolina Medical Association. Greenville.
Journal of State Medicine. London.
Journal of Tennessee State Medical Association. Nashville.
Journal of Thoracic Surgery. St. Louis.

Journal of Tropical Medicine and Hygiene. London.
Journal of Urology. Baltimore.
Kentucky Medical Journal. Bowling Green.
Klinicheskaya Meditsina. Moscow.
Klinische Wochenschrift. Berlin.
Lancet. London.
Laryngoscope. St. Louis.
Lues (Bulletin de la Société Japonaise de Syphiligraphie). Kyoto.
Liège Médical.
Maine Medical Journal. Portland.
Medical Annals of District of Columbia. Washington.
Medical Bulletin of the Veterans' Administration. Washington, D. C
Medical Journal of Australia. Sydney.
Medicine. Baltimore.
Medizinische Klinik. Berlin.
Military Surgeon. Washington, D. C.
Minerva Medica. Turin.
Minnesota Medicine. St. Paul.
Monatsschrift für Geburtshülfe und Gynäkologie. Berlin.
Monatsschrift für Kinderheilkunde. Berlin.
Monatsschrift für Psychiatrie und Neurologie. Berlin.
Münchener medizinische Wochenschrift. Munich.
Nebraska State Medical Journal. Lincoln.
Nederlandsch Tijdschrift voor Geneeskunde. Haarlem.
New England Journal of Medicine. Boston.
New Orleans Medical and Surgical Journal.
New York State Journal of Medicine. New York.
Norsk Magasin for Lægevidenskapen. Oslo.
Northwest Medicine. Seattle.
Novyy Khirurgicheskiy Arkhiv. Dnepropetrovsk.
Ohio State Medical Journal. Columbus.
Ortopedia i Travmatologia. Kharkov.
Paris Médical.
Pediatria. Naples.
Pennsylvania Medical Journal. Harrisburg.
Philippine Journal of Science. Manila.
Policlinico (Pract. Sect., Med. Sect. and Surg. Sect.). Rome.
Polska Gazeta Lekarska. Lwów.
Practitioner. London.
Presna Médica Argentina. Buenos Aires.
Presse Médicale. Paris.
Psychiatric Quarterly. Albany, N. Y.
Psychoanalytic Quarterly. Albany, N. Y.
Public Health Reports. Washington, D. C.
Puerto Rico Journal of Public Health & Tropical Medicine. San Juan.
Quarterly Bulletin of Health Organization of League of Nations. Geneva.
Quarterly Journal of Medicine. Oxford.
Radiology. Syracuse, N. Y.
Rassegna Internazionale di Clinica e Terapia. Naples.
Review of Gastroenterology. New York.
Revista Medica Latino-Americana. Buenos Aires.
Revue Belge des Sciences Medicales. Louvain.
Revue de Chirurgie. Paris.
Revue Française de Pédiatrie. Paris.
Revue Médico-Chirurgicale des Maladies du Foie. Paris.
Rhode Island Medical Journal. Providence.
Rivista di Patologia e Clinica della Tubercolosi. Bologna.
Scalpel. Brussels.
Schweizerische medizinische Wochenschrift. Basel.
Science. New York.
Semana Médica. Buenos Aires.
South African Medical Journal. Cape Town.
Southern Medical Journal. Birmingham, Ala.
Southern Surgeon. Atlanta, Ga.
Southwestern Medicine. Phoenix, Ariz.
Sovetskaya Khirurgiya. Moscow.
Sovetskaya Psikhonevrologia. Kharkov.
Sovetskaya Vrachebnaya Gazeta. Leningrad.
Strahlentherapie. Berlin.
Surgery, Gynecology and Obstetrics. Chicago.
Svenska Läkaresällskapets Handlingar. Stockholm.
Texas State Journal of Medicine. Fort Worth.
Tubercle. London.
Ugeskrift for Læger. Copenhagen.
United States Naval Medical Bulletin. Washington, D. C.
Upsala Läkareförenings Förhandlingar. Uppsala.
Virginia Medical Monthly. Richmond.
Vrachebnoe Delo. Kharkov.
Western Journal of Surgery, Obstetrics and Gynecology. Portland, Ore.
West Virginia Medical Journal. Charleston.
Wiener Archiv für Innere Medizin. Vienna.
Wiener klinische Wochenschrift. Vienna.
Wisconsin Medical Journal. Madison.
Yale Journal of Biology and Medicine. New Haven, Conn.
Zeitschrift für Geburtshülfe und Gynäkologie. Stuttgart.
Zeitschrift für Immunitätsforschung. Jena.
Zeitschrift für Kinderheilkunde. Berlin.
Zeitschrift für klinische Medizin. Berlin.
Zeitschrift für Krebsforschung. Berlin.
Zeitschrift für Tuberkulose. Leipzig.
Zeitschrift für Urologie. Leipzig.
Zentralblatt für Chirurgie. Leipzig.
Zentralblatt für Gynäkologie. Leipzig.

SUBJECT INDEX

This is an index to all the reading matter in THE JOURNAL. In the Current Medical Literature Department only the articles which have been abstracted are indexed.

The letters used to explain in which department the matter indexed appears are as follows: "BI," Bureau of Investigation; "E," Editorial; "C," Correspondence; "ME," Medical Economics; "ab," abstract; the star (*) indicates an original article in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths," "Medicolegal Abstracts" and "Societies" are indexed under these titles at the end of the letters "B," "D," "M," and "S." State board examinations are entered under the general heading State Board Reports, and not under the names of the individual states. Matter pertaining to the Association is indexed under "American Medical Association." The name of the author, in brackets, follows the subject entry.

For author index see page 2292.

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SOCIETIES

Acad.—Academy
Am.—American
A.—Association
Coll.—College
Conf.—Conference
Cong.—Congress
Conv.—Convention
Dist.—District
Hosp.—Hospital
Internat.—International
M.—Medical
Med.—Medicine
Nat.—National
Pharm.—Pharmaceutical
Physs.—Physicians
Rev.—Revision
Ry.—Railway
S.—Surgical
Soc.—Society
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